

Combined Index to ASTM Technical Papers and Reports—1969

This is an index to all papers published by ASTM during 1969 in *MR&S*, in the *Journal of Materials*, and in *Special Technical Publications*. Also included are references to those committee reports that include data published in the 1967, 1968, and 1969 *ASTM Proceedings*. The following abbreviations are used. See *MR&S* news index on page 72.

MR&S——*Materials Research & Standards*
JOM——*Journal of Materials*
STP——*Special Technical Publication*
Proc.——*ASTM Proceedings*

A

- Abrasion**
 abrasive wear (Finkin), *STP* 446
 abrasive wear of ferrous materials in climax operations (Norman and Hall), *STP* 446
 scratch and abrasion testing of transparent plastics (Wiinikainen), *MR&S*, December, 17
 wear research in Europe (Salomon and deGee), *STP* 446
- Activated carbon**
 tracer gas nondestructive testing of activated carbon cells (Turk, Mark, and Mehlman), *MR&S*, November, 24
- Acquaviva, S. J.:** Residual stresses in an overstrained thick-walled cylinder as affected by stress relief treatment, *JOM*, June, 286
- Accuracy**
 a general sampling theory (Visman), *MR&S*, November, 8
- Adhesion, determination of adhesion between rigid and flexible materials** (Harscar and Rieger), *MR&S*, October, 31
- Adhesive wear, various modes of wear and their controlling factors** (Bisson), *STP* 446
- Aggregates, mechanisms of frost action in concrete aggregates** (Cady), *JOM*, June, 294
- Aging, current research on the structure and mechanical properties of rubber-modified thermoplastics** (Bucknall), *JOM*, March, 214
- Ailor, W. H., Jr.:** Aluminum alloys after five years in seawater, *STP* 445
- Ainsworth, J. H. and Moore, R. E.:** The frequency-phase technique for damping measurements applied to several materials at elevated temperatures, *MR&S*, October, 23
- Air entrainment, effect of porosity on the strength of concrete** (Sandor), *JOM*, June, 356
- Airhart, T. P., Coyle, H. M., Hirsch, T. J. and Buchanan, S. J.:** Pile-soil system response in a cohesive soil, *STP* 444
- Aisks, E. G. and Tarshansky, I. W.:** Soil studies for seismic design of San Francisco Transbay Tube, *STP* 450
- Alizadeh, M.:** Lateral load tests on instrumental timber piles, *STP* 444
- Almond, E. A., Embury, J. D. and Wright, E. S.:** Fracture in laminated materials, *STP* 452
- Aluminum and its alloys**
 Aluminaut—three years later (Lindberg), *STP* 445
 aluminum alloys (Cocks), *MR&S*, December, 29
 aluminum alloys after five years in seawater (Ailor), *STP* 445
 an accelerated laboratory test to determine the exfoliation corrosion resistance of aluminum alloys (Romans), *MR&S*, November, 31
 correlation of fractographic features with fracture mechanics data (Bates, Clark, and Moon), *STP* 453
 cumulative fatigue damage under cyclic strain control (Topper, Sandor, and Morrow), *JOM*, March, 189
 cyclic stress-strain and fatigue behavior of representative aircraft metals (Endo and Morrow), *JOM*, March, 159
 determination of the cyclic stress-strain curve (Landgraf, Morrow, and Endo), *JOM*, March, 176
 development of a buoyancy material for the deep submergence search vehicle (Vath and Colletti), *JOM*, December, 948
 effect of atmospheric humidity on aircraft structural alloy fatigue life (Dunsby and Wiebe), *MR&S*, February, 15
 the frequency-phase technique for damping measurements applied to several materials at elevated temperatures (Ainsworth and Moore), *MR&S*, October, 23
 importance of mass transfer in determining the corrosion rate of aluminum using polarization measurements (Craig and Scott), *JOM*, September, 540
- Neuber's rule applied to fatigue of notched specimens** (Topper, Wetzel, and Morrow), *JOM*, March, 200
- polarization methods for measuring the corrosion of metals buried underground** (Jones and Lowe), *JOM*, September, 600
- stress corrosion of aluminum alloy 7075-T651 in organic liquids** (Procter and Paxton), *JOM*, September, 729
- Aluminum castings, development of radiographic standards for castings** (Goldspiel), *MR&S*, July, 13
- Aluminum oxide, the importance of coatings in the preparation of Al_2O_3 filament/metal-matrix composites** (Noone, Feingold, and Sutton), *STP* 452
- Aluminum-silicon alloy, direct observation of the effect of particle size on dispersion hardening** (Prince and Richman), *JOM*, March, 145
- Analyzers, keeping up with the ever-expanding field of analytical instrumentation—a challenge to ASTM** (Ballhaus), *MR&S*, July, 10
- Analytical instrumentation, keeping up with the ever-expanding field of analytical instrumentation—a challenge to ASTM** (Ballhaus), *MR&S*, July, 10
- Analyzing**
 chemical aspects of atomic absorption (Rains), *STP* 443
 a comparison of atomic absorption with other spectrochemical methods (Grant), *STP* 443
 a comparison of atomic absorption with some other techniques of chemical analysis (Lewis), *STP* 443
 determination of arsenic in steels, iron ores, and spelters by atomic absorption (Hill), *STP* 443
 determination of calcium in high interference systems by atomic-absorption flame photometry (Ulrich and Ramirez-Munoz), *STP* 443
 determination of cobalt and impuri-

- ties in gold plating solutions and gold plates by atomic absorption (Kapetan), *STP* 443
- determination of trace metals in seawater by atomic absorption spectrophotometry (Brewer, Spencer, and Smith), *STP* 443
- physical aspects of atomic absorption (Walsh), *STP* 443
- Anctil, A. A.: see Kula, E. B. and Anctil, A. A.
- Anjard, Ronald P.: Bubble leak testing, *MR&S*, February, 23
- Anodic polarization, the reproducibility of potentiostatic and potentiodynamic anodic polarization measurements (France), *MR&S*, September, 25
- Apple, W. R.: Infrared nondestructive inspection, a status report, *MR&S*, May, 10
- Arc lamp, comparison of sunlight and carbon arc exposure of polyesters by resulting chemical activity (Mackinney), *JOM*, March, 92
- Architecture
- art on stainless steel (Mullen), *STP* 454
- design guidelines for architectural uses of stainless steel (Koppes), *STP* 454
- stainless steel as a material for art forms (Hall), *STP* 454
- stainless steel in structural applications (Johnson and Kelsen), *STP* 454
- stainless steel—what it is and what it will do (LaQue), *STP* 454
- Armstrong Richard and Goldman, C. R.: Determination of trace amounts of molybdenum, *STP* 448
- Arnquist, J. L.: see Christman, R. F. and Arnquist, J. L.
- Arts
- art on stainless steel (Mullen), *STP* 454
- stainless steel as a material for art forms (Hall), *STP* 454
- Asphalt
- early hardening of asphaltic binder in bituminous pavement mixtures (Bright, Justice, and Steele), *JOM*, March, 231
- asphalt content by neutron moderation (Steele and Fisher), *STP* 461
- a pycnometer test procedure for determining asphalt content of paving mixture (Steele and Hudson), *STP* 461
- the use of a nuclear asphalt content gauge (Hughes), *STP* 461
- Atmospheric exposure
- does the angle of exposure to the sun make a difference? (Neuman), *MR&S*, June, 38
- effect of atmospheric humidity on aircraft structural alloy fatigue life (Dunsby and Wiebe), *MR&S*, February, 15
- resistance of passenger tires to atmospheric exposure (Hofmann and Miller), *JOM*, March, 31
- Atmospheric humidity, effect of atmospheric humidity of aircraft structural alloy fatigue life (Dunsby and Wiebe), *MR&S*, February, 15
- Atomic absorption
- chemical aspects of atomic absorption (Rains), *STP* 443
- a comparison of atomic absorption with other spectrochemical methods (Grant), *STP* 443
- a comparison of atomic absorption with some other techniques of chemical analysis (Lewis), *STP* 443
- determination of arsenic in steels, iron ores, and spelters by atomic absorption (Hill), *STP* 443
- determination of calcium in high interference systems by atomic-absorption flame photometry (Ulrich and Ramirez-Munoz), *STP* 443
- determination of cobalt and impurities in gold plating solutions and gold plates by atomic absorption (Kapetan), *STP* 443
- determination of trace metals in seawater by atomic absorption spectrophotometry (Brewer, Spencer, and Smith), *STP* 443
- physical aspects of atomic absorption (Walsh), *STP* 443
- Austin, L. E.: see Outwater, J. O. and Austin, L. E.
- Austenitic stainless steels, solid solubility of nitrogen in various commercial austenitic stainless steels (Cox and Eckel), *JOM*, June, 282
- Automobiles, Florida skid correlation study of 1967—skid testing with automobiles (Rizenbergs), *STP* 456
- Automobile tires
- resistance of passenger tires to atmospheric exposure (Hofmann and Miller), *JOM*, March, 31
- review of test methods for tire friction characteristics (Meyer and Schrock), *JOM*, March, 44
- testing tires for resistance to impact, shock, and cuts (Dobie), *MR&S*, March, 24
- Axles
- fatigue strength of induction hardened railway axles (Nishioka, Ishii, and Komatsu), *JOM*, June, 413

B

- Babcock, F. M.: see Margason, B. E., McNeill, R. L. and Babcock, F. M.
- Bacteria, uptake and assimilation of nitrogen in microecological systems (Ehrlich and Slack), *STP* 448
- Baker, R. A.: Freeze concentration of microorganisms in water, *STP* 448
- Ballhaus, W. F.: Keeping up with the ever-expanding field of analytical instrumentation—a challenge to ASTM, *MR&S*, July, 10
- Baney, R. H.: see Johannson, O. K., Stark, F. O., Vogel, G. E., Lacefield, R. M., Baney, R. H. and Flaningam, O. L.
- Bart, R. K.: see Wallace, R. W., Norton, C. L., Jr., Bart, R. K. and Brady, J. G.
- Basche, M.: Interfacial stability of silicon carbide coated boron filament reinforced metals, *STP* 452
- Batchelder, G. M.: The nonlinear disparity in converting knoop to rockwell c hardness, *MR&S*, November, 27
- Bates, R. C., Clark, W. G., Jr. and Moon, D. M.: Correlation of fractographic features with fracture mechanics data, *STP* 453
- Battery materials, effects of the deep-sea environment on battery materials and characteristics (Work), *STP* 445
- Bearing capacity
- analyses of pile group behavior (Keshavan, Gray, and Donovan), *STP* 444
- design of caissons on granular-cohesive soils (Housel), *STP* 444
- experiments with instrumented pile groups in sand (Vesic), *STP* 444
- measurements of pile load transfer (Hunter and Davisson), *STP* 444
- Bell, R. A.: see Darragh, R. D. and Bell, R. A.
- Bend tests
- an improved variable strain bending form for determining the environmental craze resistance of polymers (Stolki and Haslett), *MR&S*, December, 32
- Bendtsen, B. A. and Rattner, Fred: Method for determining sample size when deriving tolerance limits for a timber species, *MR&S*, June 30
- Bergman, Paul: see Doering, Harvey von E. and Bergman, Paul
- Beryllium, fracture toughness of beryllium (Harrod, Hengstenberg, and Manjoine), *JOM*, September, 618
- Biaxial test, analysis of the biaxial strip test for polymeric materials (Cost and Parr), *JOM*, June, 312
- Bicking, C. A.: Operations research and the measurement of materials, *MR&S*, June, 8
- Bienenfeld, N.: The alumiline stainless-steel entrance system, *STP* 454
- Biodeterioration (materials)
- deterioration of wood by marine fungi in the deep sea (Kohlmeier), *STP* 445
- effect of deep-ocean environment on plastics (Muraoka), *STP* 445
- the information background in the field of biological deterioration of nonmetallic materials (Wessel), *STP* 445
- Biological degradation, microbes and microorganisms in water—a review (Tallon), *STP* 448
- Bisson, E. E.: Various modes of wear and their controlling factors, *STP* 446
- Bituminous concrete
- asphalt content by neutron moderation (Steele and Fisher), *STP* 461
- a pycnometer test procedure for determining asphalt content of paving mixture (Steele and Hudson), *STP* 461
- the use of a nuclear content gauge (Hughes), *STP* 461
- vacuum extraction of bitumen from pavement mixtures (Jones, Wiley and Smith), *STP* 461
- Bituminous materials, early hardening of asphaltic binder in bituminous pavement mixtures (Bright, Justice, and Steele), *JOM*, March, 231
- Blackburn, M. J.: see Williams, J. C., Boyer, R. R. and Blackburn, M. J.
- Blake, Robert W.: The language of performance, *MR&S*, March, 11
- Boron
- interfacial stability of silicon carbide coated boron filament reinforced metals (Basche), *STP* 452
- measurement of the fiber-polymer matrix interfacial strength (Broutman), *STP* 452
- Boyer, R. R.: see Williams, J. C., Boyer, R. R. and Blackburn, M. J.
- Bozozuk, Michael and Labrecque, Andre: Downdrag measurements on 270-ft composite piles, *STP* 444
- Brady, E. L.: The national standard reference data system, *MR&S*, October, 19
- Brass
- fatigue characteristics of five copper-base strip alloys commonly used for spring applications (France, Trout, and Mulholland), *JOM*, September, 633
- generalized parabolic work hardening during tensile deformation of brass (Hartman), *JOM*, March, 104
- Brewer, P. G., Spencer, D. W. and Smith, C. L.: Determination of trace metals in seawater by atomic absorption spectrophotometry, *STP* 443
- Breyer, N. N.: see Zipp, R. D., Warke, W. R. and Breyer, N. N.
- Bright, Richard, Justice, Alan, and Steele, John: Early hardening of asphaltic binder in bituminous pavement mixtures, *JOM*, March, 231
- Brittle materials, the development of a

(Continued on page 56)

head of environmental engineering at Rensselaer Polytechnic Institute. (4 September). In 1965 Professor Kilcawley was awarded honorary memberships by ASTM, and the Committee on Soil and Rock for engineering purposes of the Society.

Combined Index

(Continued from page 42)

- uniaxial tension test for concrete and similar brittle materials (Ward and Cook), *MR&S*, May, 16
- Broutman, L. J.: Measurement of the fiber-polymer matrix interfacial strength, *STP* 452
- Brown, D. L.: see Lemon, J. R., Peter, A. F., Brown, D. L. and Leist, T. H.
- Brown, W. F., Jr.: see Bubsey, R. T., Jones, M. H. and Brown, W. F., Jr.
- Bubble leak testing, bubble leak testing (Anjard), *MR&S*, February, 23
- Bubsey, R. T., Jones, M. H. and Brown, W. F., Jr.: Clevis design for compact tension specimens used in plane strain fracture toughness testing, *MR&S*, June, 32
- Buchanan, S. J.: see Airhart, T. P., Coyle, H. M., Hirsch, T. J. and Buchanan, S. J.
- Bucknall, C. B.: Current research on the structure and mechanical properties of rubber-modified thermoplastics, *JOM*, March, 214
- Buildings
 - the language of performance (Blake), *MR&S*, March, 11
 - a recorder to measure the joint movement in a building (Gibbons and Karpatis), *MR&S*, April, 18
 - stainless steel in structural applications (Johnson and Kelsen), *STP* 454
 - stainless steel—what it is and what it will do (LaQue), *STP* 454
- Buoyancy materials, development of a buoyancy material for the deep submergence search vehicle (Vath and Colletti), *JOM*, December, 948
- Burst tests, a comparison of the experimental biaxial strength of structural alloys with theoretical predictions (Rawe and Corn), *JOM*, March, 3
- Burwash, W. J.: see Ho, Michael M. K. and Burwash, W. J.
- Butt, S. H.: Welded heat exchanger tube and the application of alloy 194 to heat exchanger tube, *MR&S*, November, 15

C

- Cady, P. D.: Mechanisms of frost action in concrete aggregates, *JOM*, June, 294
- Caine, J. B.: High factors of safety of usable design strengths, *STP* 455
- Caissons, design of caissons on granular-cohesive soils (Housel), *STP* 444
- Calcium, determination of calcium in high interference systems by atomic-absorption flame photometry (Ulrich and Ramirez-Munoz), *STP* 443
- Calcium chloride, behavior of concrete in saturated and weak solutions of magnesium sulphate or calcium chloride (Neville), *JOM*, December, 780
- Calhoun, C. D. and Stoloff, N.S.: A fractographic study of precipitation hardened and dispersion strengthened magnesium-base alloys, *STP* 453

- Calibration, keeping up with the ever-expanding field of analytical instrumentation—a challenge to ASTM (Ballhaus), *MR&S*, July, 10
- Carbides, characterization and thermal stability of nickel-base superalloys (Collins and Kortovich), *JOM*, March, 62
- Carbon fibers, interfacial bonding in graphite fiber-resin composites (Goan and Prosen), *STP* 452
- Carbon steel, evaluation of elevated-temperature strength data (Smith), *JOM*, December, 878
- Carr, F. L. and Larson, F. R.: Fracture surface topography and toughness of AISI 4340 steel, *JOM*, December, 865
- Chen, P. E. and Lin, J. M.: Transverse properties of fibrous composites, *MR&S*, August, 29
- Christman, R. F. and Arnuist, J. L.: Fluorescence techniques in detection of organics in water, *STP* 448
- Church, J. M.: see Green, P. S., Church, J. M. and Eilers, G. J.
- Clair, M. N.: Past president Clair talks about performance, *MR&S*, March, 8
- Clark, W. G., Jr.:
 - see Bates, R. C., Clark, W. G., Jr., and Moon, D. M.
- Clark, W. G., Jr. and Wessel, E. T.: Influence of synthetic seawater environment on the fracture behavior of HP 9-4-25 and HP 9-4-20 alloy steels, *STP* 445
- Clausing, D. P.: Stress and strain distribution in a tension specimen with a circumferential notch, *JOM*, September, 566
- Tensile properties of eight constructional steels between 70 and -320 F, *JOM*, June, 473
- Clay
 - nonlinear dynamic response of soft clay (Krizek and Franklin), *STP* 450
 - soil studies for seismic design of San Francisco Transbay Tube (Aisks and Tarshansky), *STP* 450
 - strength and stress-strain characteristics of clays subjected to seismic loading conditions (Thiers and Seed), *STP* 450
 - stress-strain behavior of clays in dynamic compression (Yong and Japp), *STP* 450
 - torsional shear testing technique for dynamic properties of clay (Krizek and Franklin), *STP* 450
- Cleanliness, detection of inclusions in bearing quality steel by the ultrasonic method (Meldrum), *MR&S*, September, 21
- Clevis design, clevis design for compact tension specimens used in plane strain fracture toughness testing (Bubsey, Jones, and Brown), *MR&S*, June, 32
- Cocks, F. H.: The separation of corrosion and stress effects in stress corrosion testing, *MR&S*, December, 29
- Cohen, S. M., Ferris, T. J., Mont, G. E. and Martins, J. G.: A versatile plastic sheet impact tester, *MR&S*, May, 21
- Colletti, W.: see Vath, F. and Colletti, W.
- Collins, H. E. and Kortovich, C. S.: Characterization and thermal stability of nickel-base superalloys, *JOM*, March, 62
- Compatibility, apparatus for impact testing of fluorinating agents (English and Spicer), *MR&S*, January, 17
- Composites
 - differential ultrasonic visualization of

- impact fractures in glass-reinforced plastics (Green, Church, and Eilers), *MR&S*, October, 24
- Compression tests
 - effect of water on glass fiber-resin bonds (Eakins), *STP* 452
 - fracture in laminated materials (Almond, Embury, and Wright), *STP* 452
 - the importance of coatings in the preparation of Al_2O_3 filament/metal-matrix composites (Noone, Feingold, and Sutton), *STP* 452
 - interfacial bonding in graphite fiber-resin composites (Goan and Prosen), *STP* 452
 - interfacial stability of eutectic composites (Salkind), *STP* 452
 - interfacial stability of silicon carbide coated boron filament reinforced metals (Basche), *STP* 452
 - the performance of glass-filament-wound pressure vessels with metal liners at cryogenic temperatures (Morris), *JOM*, December, 970
 - role of the interface in the fracture of fiber-composite materials (Cooper and Kelly), *STP* 452
 - a study of the compression test for ductile materials (Hsu), *MR&S*, December, 20
 - theoretical studies of the mechanics of the fiber-matrix interface in composites (Greszczuk), *STP* 452
 - transverse properties of fibrous composites (Chen and Lin), *MR&S*, August, 29
 - wetting, adsorption, and bonding at glass fiber-coupling agent-resin interfaces (Johannson, Stark, Vogel, Laceyfield, Baney, and Flaningam), *STP* 452
- Concentrating, freeze concentration of microorganisms in water (Baker), *STP* 448
- Concrete
 - behavior of concrete in saturated and weak solutions of magnesium sulphate or calcium chloride (Neville), *JOM*, December, 780
 - the development of a uniaxial tension test for concrete and similar brittle materials (Ward and Cook), *MR&S*, May, 16
 - the distribution of concrete strains in the split cylinder test (Franca and Pincus), *JOM*, June, 393
 - effect of porosity on the strength of concrete (Sandor), *JOM*, June, 356
 - fracture of concrete (Moavenzadeh and Kuguel), *JOM*, September, 497
 - mechanisms of frost action in concrete aggregates (Cady), *JOM*, June, 294
 - neutron attenuation mechanisms in concrete shielding (Greenborg), *JOM*, June, 251
- Connolly, R. A. and Landstrom, R. E.: Gopher damage to buried cable materials, *MR&S*, December, 13
- Construction
 - the language of performance (Blake), *MR&S*, March, 11
 - past president Clair talks about performance (Clair), *MR&S*, March, 8
 - tensile properties of eight constructional steels between 70 and -320 F (Clausing), *JOM*, June, 473
- Consumers
 - an insurance engineer looks at products liability (Shankula), *MR&S*, December, 8
- Consumer product, performance in the consumer product industry (Stoll), *MR&S*, March, 15
- Contamination, bubble leak testing (Anjard), *MR&S*, February, 23

Cook, D. J.: see Ward, M. A. and Cook, D. J.

Cooling towers
control of thermal discharges at northern states power company's steam generating plants (Fitch), *MR&S*, December, 26

Cooper, G. A. and Kelly, A.: Role of the interface in the fracture of fiber-composite materials, *STP* 452

Copper, determination of the cyclic stress-strain curve (Landgraf, Morrow, and Endo), *JOM*, March, 176

Corn, D. L.: see Rawe, R. A. and Corn, D. L.

Corrosion of materials
aluminum alloys after five years in seawater (Ailor), *STP* 445
electrode potential measurements of nickel-base alloys in molten salts (Doering), *JOM*, June, 457
fatigue life of weathered stainless steel wire reported (Rigo), *STP* 454
influence of chromium on the atmospheric-corrosion behavior of steel (Schmitt and Mullen), *STP* 454
stainless steel—what it is and what it will do (LaQue), *STP* 454
stress corrosion of aluminum alloy 7075-T651 in organic liquids (Procter and Paxton), *JOM*, September, 729
thermochemistry of the hot corrosion of superalloys (Quets and Drescher), *JOM*, September, 583

Corrosion tests
an accelerated laboratory test to determine the exfoliation corrosion resistance of aluminum alloys (Romans), *MR&S*, November, 31
a dynamic hot-corrosion rig testing procedure (Rentz, Walters, and Freeman), *JOM*, September, 520
construction and operation of a hot corrosion test facility (Doering and Bergman), *MR&S*, September, 35
controlled potential corrosion tests, their applications and limitations (France), *MR&S*, August, 21
high-temperature corrosion testing of valve alloys (Johnson and Wilde), *JOM*, September, 556
importance of mass transfer in determining the corrosion rate of aluminum using polarization measurements (Craig and Scott), *JOM*, September, 540
polarization methods for measuring the corrosion of metals buried underground (Jones and Lowe), *JOM*, September, 600
the reproducibility of potentiostatic and potentiodynamic anodic polarization measurements (France), *MR&S*, September, 25
twenty-year atmospheric exposure data (Jasper and Lawson), *STP* 454
various modes of wear and their controlling factors (Bisson), *STP* 446

Cost, T. L. and Parr, C. H.: Analysis of the biaxial strip test for polymeric materials, *JOM*, June, 312

Cox, T. B. and Eckel, J. F.: Solid solubility of nitrogen in various commercial austenitic stainless steels, *JOM*, June, 282

Cox, W. R.: see Reese, L. C. and Cox, W. R.

Coyle, H. M.: see Airhart, T. P., Coyle, H. M., Hirsch, T. J. and Buchanan, S. J.

Crack detection, definition of fatigue cracks through nondestructive testing (Packman, Pearson, Owens, and Young), *JOM*, September, 666

Crack propagation, effect of external hydrostatic pressure on damaged glass hydrospheres (Outwater and Austin), *STP* 445

Craig, H. L., Jr. and Scoit, J. R.: Importance of mass transfer in determining the corrosion rate of aluminum using polarization measurements, *JOM*, September, 540

Crane, L. S.: New perspectives in Engineering, an interview with the new president, *MR&S*, July, 8

Crawford, C. B.: Instrumentation and downdrag, *STP* 444

Creep
current research on the structure and mechanical properties of rubber-modified thermoplastics (Bucknall), *JOM*, March, 214
a survey of compression creep testing of metals (Dutton), *MR&S*, April, 11

Crisculo, E. L.: Equivalence of ASTM reference radiographs for steel castings, *MR&S*, May, 14

Cumulative damage, cumulative fatigue damage under cyclic strain control (Topper, Sandor, and Morrow), *JOM*, March, 189

Cyclic loading, the frequency-phase technique for damping measurements applied to several materials at elevated temperatures (Ainsworth and Moore), *MR&S*, October, 23

Cyclic testing, cyclic stress-strain and fatigue behavior of representative aircraft metals (Endo and Morrow), *JOM*, March, 159

D

Damage
damage in laser glass (Glass and Guenther), *MR&S*, November, 14

Darragh, R. D. and Bell, R. A.: Load tests on long bearing piles, *STP* 444

Data, the national standard reference data system (Brady), *MR&S*, October, 19

Davisson, M. T. and McDonald, V. J. M.: Energy measurements for a diesel hammer, *STP* 444
and Salley, J. R.: Lateral Load tests on drilled piers, *STP* 444
see Hunter, A. H. and Davisson, M. T.

DeCarlo, C. R.: The new reality in technology, *MR&S*, February, 8

Deep foundations
experiments with instrumented pile groups in sand (Vesic), *STP* 444
load transfer, lateral loads, and group action of deep foundations (Vesic), *STP* 444

Deep sea, see oceans

Deep submergence
deterioration of wood by marine fungi in the deep sea (Kohlmeyer), *STP* 445
effect of external hydrostatic pressure on damaged glass hydrospheres (Outwater and Austin), *STP* 445
effects of the deep-sea environment on battery materials and characteristics (Work), *STP* 445

Definitions, using ASTM specifications in industrial material specifications (Turner), *MR&S*, April, 8

DeForest, D. R.: see Fritz, K. E. and DeForest, D. R.

deGee, A. W. J.: see Salomon, G. and deGee, A. W. J.

DeLuccia, J. J.: see Nanis, Leonard and DeLuccia, J. J.

Diesel hammers, energy measurements for a diesel hammer (Davisson and

McDonald), *STP* 444

Dislocation (materials), direct observation of the effect of particle size on dispersion hardening (Prince and Richman), *JOM*, March, 145

Dispersion hardening, direct observation of the effect of particle size on dispersion hardening (Prince and Richman), *JOM*, March, 145

Dobie, W. J.: Testing tires for resistance to impact, shock, and cuts, *MR&S*, March, 24

Doering, Harvey von E.:
and Bergman, Paul: Construction and operation of a hot corrosion test facility, *MR&S*, September, 35
Electrode potential measurements of nickel-base alloys in molten salts, *JOM*, June, 457

Donovan, N. C.: see Nair, Keshavan, Gray, Hamilton and Donovan, N. C.

Doors, the alumilene stainless-steel entrance system (Bienenfeld), *STP* 454

Dresher, W. H.: see Quets, J. M. and Dresher, W. H.

Drilled piers, lateral load tests on drilled piers (Davisson and Salley), *STP* 444

Drop-weight tear test, drop-weight tear test reproducibility examined (Krafft—Chairman, Subcommittee 3, Committee E-24), *MR&S*, February, 11

Ductile iron castings
field testing of components (Olberts and Tucker), *STP* 455
gray iron—a unique engineering material (Krause), *STP* 455
high factors of safety or usable design strengths (Caine), *STP* 455
malleable iron (Heine), *STP* 455

Ductility tests
effect of microstructure on the ductility of steel in torsion (Lemmon and Sherby), *JOM*, June, 444
fractographic study of precipitation hardened and dispersion strengthened magnesium-base alloys (Calhoun and Stoloff), *STP* 453
use of electron microfractography in interpreting the mechanisms of fatigue crack propagation (Nair and Le May), *STP* 453

Dudderar, T. D.: The effect of grip stresses on the occurrence of failure in tension tests of wire, *MR&S*, October, 30

Dunsby, J. A. and Wiebe, W.: Effect of atmospheric humidity on aircraft structural alloy fatigue life, *MR&S*, February, 15

Dutton, Roger: A survey of compression creep testing of metals, *MR&S*, April, 11

Dynamic loads
case histories in foundations vibrations (Margason, McNeill, and Babcock), *STP* 450
factors affecting the cyclic loading strength of soil (Lee and Fitton), *STP* 450
laboratory simulation of seismic activity in saturated sands (Schroeder and Schuster), *STP* 450
lateral load tests on drilled piers (Davisson and Salley), *STP* 444
nonlinear dynamic response of soft clay (Krzek and Franklin), *STP* 450
torsional shear testing technique for dynamic properties of clay (Krzek and Franklin), *STP* 450
stress-strain behavior of clays in dynamic compression (Yong and Japp), *STP* 450
vertical vibration of a rigid foundation resting on sand (Ho and Burwash), *STP* 450

Dynamic testing, dynamic shear stress-strain-strain rate relations of iron (Yen and Yew), *JOM*, June, 324

E

- Eakins, W. J.: Effect of water on glass fiber-resin bonds, *STP* 452
- Earthquakes
- dynamic and earthquake forces on deep foundations (Keshavan), *STP* 444
 - factors affecting the cyclic loading strength of soil (Lee and Fitton), *STP* 450
 - laboratory simulation of seismic activity in saturated sands (Schroeder and Schuster), *STP* 450
 - soil studies for seismic design of San Francisco Transbay Tube (Aisks and Tarshansky), *STP* 450
 - strength and stress-strain characteristics of clays subjected to seismic loading conditions (Thiers and Seed), *STP* 450
 - stress-strain behavior of clays in dynamic compression (Yong and Japp), *STP* 450
- Eckel, J. F.: see Cox, T. B. and Eckel, J. F.
- Education, the impact of materials science on materials engineering (Thomson), *JOM*, December, 939
- Ehrlich, G. G. and Slack, K. V.: Uptake and assimilation of nitrogen in microecological systems, *STP* 448
- Eilers, G. J.: see Green, P. S., Church, J. M. and Eilers, G. J.
- Elastomers, determination of adhesion between rigid and flexible materials (Harczar and Rieger), *MR&S*, October, 31
- Electrochemical measurements, electrode potential measurements of nickel-base alloys in molten salts (Doering), *JOM*, June, 457
- Electrochemical techniques, the reproducibility of potentiostatic and potentiodynamic anodic polarization measurements (France), *MR&S*, September, 25
- Electron impact spectrometer, electron impact spectrometry for gas phase chemical analysis (Simpson), *MR&S*, August, 13
- Electron microscopy
- the characteristics and applications of the scanning microscope (Kimoto and Russ), *MR&S*, January, 8
 - current research on the structure and mechanical properties of rubber-modified thermoplastics (Bucknall), *JOM*, March, 214
- Electronic components, bubble leak testing (Anjard), *MR&S*, February, 23
- Electronic potentiostat, the reproducibility of potentiostatic and potentiodynamic anodic polarization measurements (France), *MR&S*, September, 25
- Elevated temperature, evaluation of elevated-temperature strength data (Smith), *JOM*, December, 878
- Elongation
- the effect of grip stresses on the occurrence of failure in tension tests of wire (Dudderar), *MR&S*, October, 30
 - elongational flow (Hoffman), *JOM*, March, 28
- Embrittlement
- a comparison of elevated temperature tensile fractures in nonlead and lead 4145 steel (Zipp, Warke, and Breyer), *STP* 453
 - tempered martensite embrittlement and fracture toughness in SAE 4340 steel (Kula and Anttil), *JOM*, December, 816
- Embury, E. A.: see Almond, E. A., Embury, J. D. and Wright, E. S.
- Endo, T.: and Morrow, JoDean: Cyclic stress-strain and fatigue behavior of representative aircraft metals, *JOM*, March, 159
- Endo, T.: see Landgraf, R. W., Morrow, JoDean and Endo, T.
- Engineering
- new perspectives in engineering, an interview with the new president (Crane), *MR&S*, July, 8
 - the impact of materials science on materials engineering (Thomson), *JOM*, December, 939
- Engine valves, high-temperature corrosion testing of valve alloys (Johnson and Wilde), *JOM*, September, 556
- Engler, equations for converting different viscosity units (O'Donnell), *MR&S*, May, 25
- English, W. D. and Spicer, D. R.: Apparatus for impact testing of fluorinating agents, *MR&S*, January, 17
- Environment, does the angle of exposure to the sun make a difference (Neuman), *MR&S*, June, 38
- Environmental quality, fire retardant paints (Miller), *MR&S*, August, 33
- Environmental testing, modified WO1 specimen for K₁ environmental testing (Novak and Rolfe), *JOM*, September, 701
- Epoxy resin, development of a buoyancy material for the deep submergence search vehicle (Vath and Colletti), *JOM*, December, 948
- Escher, E. E.: Spark source mass spectrometry, *MR&S*, June, 19
- Eutectics, interfacial stability of eutectic composites (Salkind), *STP* 452
- Evaluation, abrasive wear of ferrous materials in climax operations (Norman and Hall), *STP* 446
- Experiment design, operations research and the measurement of materials (Bicking), *MR&S*, June, 8
- Explosive forming, advances in the theory of explosive metalworking (Ezra), *JOM*, June, 338
- Exposure
- comparison of sunlight and carbon arc exposure of polyesters by resulting chemical activity (MacKinney), *JOM*, March, 92
 - does the angle of exposure to the sun make a difference (Neuman), *MR&S*, June, 38
- Ezra, A. A.: Advances in the theory of explosive metalworking, *JOM*, June, 338

F

Fatigue (materials)

- atmospheric humidity, effect of on aircraft structural alloy fatigue life (Dunsby and Wiebe), *MR&S*, March, 15
 - cyclic stress-strain and fatigue behavior of representative aircraft metals (Endo and Morrow), *JOM*, March, 159
 - electron microfractography, use of in interpreting the mechanisms of fatigue crack propagation (Nair and Le May), *STP* 453
 - fatigue characteristics of five copper-base strip alloys commonly used for spring applications (France, Trout, and Mulholland), *JOM*, September, 633
 - fatigue strength of induction hardened railway axles (Nishioka, Ishii, and Komatsu), *JOM*, June, 413
 - fractographic studies of crack-tip zones in a structural steel (Fegredo), *STP* 453
 - fracture surface and processes in polycarbonate (Jacoby), *STP* 453
 - microstructure, influence of on the fracture topography of titanium alloys (Williams, Boyer, and Blackburn), *STP* 453
- Fatigue testing
- Bibliography on low-cycle fatigue, 1957-1967, *STP* 449
 - correlation between sustained-load and fatigue crack growth in high-strength steels (Wei and Landes), *MR&S*, July, 25
 - cumulative fatigue damage under cyclic strain control (Topper, Sandor, and Morrow), *JOM*, March, 189
 - definition of fatigue cracks through nondestructive testing (Packman, Pearson, Owens, and Young), *JOM*, September, 666
 - determination of the cyclic stress-strain curve (Landgraf, Morrow, and Endo), *JOM*, March, 176
 - inclination of fatigue cracks in plane strain fracture toughness test specimens (Fisher and Repko), *MR&S*, May, 28
 - Neuber's rule applied to fatigue of notched specimens (Topper, Wetzel, and Morrow), *JOM*, March, 200
- Faust, S. D. and Suffet, I. H.: Analysis for organic pesticides in aquatic environments, *STP* 448
- Fegredo, D. M.: Fractographic studies of crack-tip zones in a structural steel, *STP* 453
- Feingold, E.: see Noone, M. J., Feingold, E. and Sutton, W. H.
- Fenske, E. R. and Johnson, W. C.: A new measure for octane rating, *MR&S*, October, 32
- Ferris, T. J.: see Cohen, S. M., Ferris, T. J., Mont, G. E. and Martins, J. G.
- Ferrous castings, high factors of safety or usable design strengths (Caine), *STP* 445
- Fetter, E. C.: Bellows-activated joint simulators, *MR&S*, July, 20
- Fibers
- role of the interface in the fracture of fiber-composite materials (Cooper and Kelly), *STP* 452
 - transverse properties of fibrous composites (Chen and Lin), *MR&S*, August, 29
- Fields tests, instrumentation and down-drag (Crawford), *STP* 444
- Filaments
- the importance of coatings in the preparation of Al₂O₃ filament/metal-matrix composites (Noone, Feingold, and Sutton), *STP* 452
 - interfacial stability of silicon carbide coated boron filament reinforced metals (Basche), *STP* 452
- Finkin, E. F.: Abrasive wear, *STP* 446
- Fire hazard rating, Steiner tunnel furnace (Haas), *MR&S*, July, 29
- Fisher, C. P.: see Steele, J. H.
- Fisher, D. M. and Repko, A. J.: Note on inclination of fatigue cracks in plane strain fracture toughness test specimens, *MR&S*, May, 28
- Fitch, N. R.: Control of thermal discharges at northern states power company's steam generating plants, *MR&S*, December, 26
- Fitton, J. A.: see Lee, K. L. and Fitton, J. A.
- Flaningham, O. L.: see Johansson, O. K., Stark, F. O., Vogel, G. E., Laceyfield, R. M., Baney, R. H. and Flaningham, O. L.
- Flavonoids, fluorescence techniques in

- detection of organics in water (Christman and Arnquist), *STP 448*
- Flaw detection, modified WOL specimen for K_{Isc} environmental testing (Novak and Rolfe), *JOM*, September, 701
- Floor, friction of, evaluation of the horizontal pull slipmeter (Robinson and Kopf), *MR&S*, July, 22
- Flow, elongational flow (Hoffman), *JOM*, March, 28
- Fluorine compounds, apparatus for impact testing of fluorinating agents (English and Spicer), *MR&S*, January, 17
- Foundations
- case histories in foundation vibrations (Margason, McNeill, and Babcock), *STP 450*
 - the mechanics of load mobilization in friction piles (Hanna), *JOM*, December, 924
 - vertical vibration of a rigid foundation resting on sand (Ho and Burwash), *STP 450*
- Foundry methods, gray iron—a unique engineering material (Krause), *STP 455*
- Fractography
- correlation of fractographic features with fracture mechanics data (Bates, Clark, and Moon), *STP 453*
 - correlations between fractographic features and plane-strain fracture toughness in an ultrahigh-strength steel (Spitzig), *STP 453*
 - fractographic studies of crack-tip zones in a structural steel (Fegredo), *STP 453*
 - fractographic studies on the cleavage fracture of single crystals of iron (Kitajima and Futagami), *STP 453*
 - the influence of microstructure on the fracture topography of titanium alloys (Williams, Boyer, and Blackburn), *STP 453*
 - relationship between precipitation and dimple fracture in an 18 percent nickel maraging steel (Roesch and Henry), *STP 453*
 - use of electron microfractography in interpreting the mechanisms of fatigue crack propagation (Nair and Le May), *STP 453*
- Fracture (materials)
- beryllium, fracture toughness of (Harrod, Hengstenberg, and Manjoine) *JOM*, September, 618
 - concrete, fracture of (Moavenzadeh and Kuguel), *JOM*, September, 497
 - fiber-composite materials, role of the interface in the fracture of (Cooper and Kelly), *STP 452*
 - fiber-matrix interface in composites, theoretical studies of the mechanics of the (Greszczuk) *STP 452*
 - iron, fractographic studies on the cleavage fracture of single crystals of iron (Kitajima and Futagami), *STP 453*
 - laminated materials, fracture in, (Almond, Embury, and Wright), *STP 452*
 - magnesium-base alloys, a fractographic study of precipitation hardened and dispersion strengthened (Calhoun and Stoloff), *STP 453*
 - polycarbonate, fracture surface and processes in (Jacoby), *STP 453*
- Fracture tests
- clevis design for compact tension specimens used in plane strain fracture toughness testing (Bubsey, Jones, and Brown), *MR&S*, June, 32
 - correlation of fractographic features with fracture mechanics data (Bates, Clark, and Moon), *STP 453*
 - drop-weight tear test reproducibility examined (Krafft—Chairman, Subcommittee 3, Committee E-24), *MR&S*, February, 11
 - inclination of fatigue cracks in plane strain fracture toughness test specimens (Fisher and Repko), *MR&S*, May, 28
- Fracture tests
- modified WOL specimen for K_{Isc} environmental testing (Novak and Rolfe), *JOM*, September, 701
 - progress in the development and manufacture of higher strength nonmagnetic retaining rings (Fritz and DeForest), *JOM*, September, 647
- Fractures (materials)
- steel, a comparison of elevated temperature tensile fractures in non-leaded and leaded 4145 steel (Zipp, Warke, and Breyer), *STP 453*
 - steel, correlations between fractographic features and plane-strain fracture toughness in an ultrahigh-strength steel (Spitzig), *STP 453*
 - steel, fracture surface topography and toughness of AISI 4340 steel (Carr and Larson), *JOM*, December, 865
 - steel, influence of a synthetic seawater environment on the fracture behavior of HP 9-4-25 and HP 9-4-20 alloy steels (Clark and Wesel), *STP 445*
 - steel, relationship between precipitation and dimple fracture in an 18 percent nickel maraging steel (Roesch and Henry), *STP 453*
 - titanium alloys, the influence of microstructure on the fracture topography of (Williams, Boyer, and Blackburn), *STP 453*
- Franca, G. de C., and Pincus, George: The distribution of concrete strains in the split cylinder test, *JOM*, June, 393
- France, W. D. Jr.: Controlled potential corrosion tests, their applications and limitations, *MR&S*, August, 21 (G-1, Sub XI, T. G. 2): The reproducibility of potentiostatic and potentiodynamic anodic polarization measurements, *MR&S*, September, 25
- Franklin, A. G.: see Krizek, R. J. and Franklin, A. G.
- Freeman, W. R., Jr.: see Rentz, W. A., Walters, J. J. and Freeman, W. R., Jr.
- Fretting fatigue, fatigue strength of induction hardened railway axles (Nishioka, Ishii, and Komatsu), *JOM*, June, 413
- Friction
- review of test methods for tire friction characteristics (Meyer and Schrock), *JOM*, March, 44
 - wear and friction of nonmetallic materials (Glaser), *STP 446*
- Fritz, K. E. and DeForest, D. R.: Progress in the development and manufacture of higher strength nonmagnetic retaining rings, *JOM*, September, 647
- Frost action, mechanisms of frost action in concrete aggregates (Cady), *JOM*, June, 294
- Fry, Z. B.: see Maxwell, A. A., Fry, Z. B. and Poplin, J. K.
- Fuels, a new measure for octane rating (Fenske and Johnson), *MR&S*, October, 32
- Fuller, S. L.: see Smith, L. L. and Fuller, S. L.
- Futagami, K.: see Kitajima, K. and Futagami, K.

G

- Gas analysis, electron impact spectrometry for gas phase chemical analysis (Simpson), *MR&S*, August, 13
- construction and operation of a hot corrosion test facility (Doering and Bergman), *MR&S*, September, 35
- a dynamic hot-corrosion rig testing procedure (Rentz, Walters, and Freeman), *JOM*, September, 520
- thermochemistry of the hot corrosion of superalloys (Quets and Dresher), *JOM*, September, 583
- tracer gas nondestructive testing of activated carbon cells (Turk, Mark, and Mehlman), *MR&S*, November, 24
- Gibbons, E. V. and Karpati, K. K.: A recorder to measure the joint movement in a building, *MR&S*, April, 18
- Glaser, W. A.: Wear and friction of non-metallic materials, *STP 446*
- Glass, A. J. and Guenther, A. H.: Damage in laser glass, *MR&S*, November, 14
- Glass
- development of a buoyancy material for the deep submergence search vehicle (Vath and Colletti), *JOM*, December, 948
 - effect of external hydrostatic pressure on damaged glass hydro-spheres (Outwater and Austin), *STP 445*
- Glass fibers
- differential ultrasonic visualization of impact fractures in glass-reinforced plastics (Green, Church, and Eilers), *MR&S*, October, 24
 - effect of water on glass fiber-resin bonds (Eakins), *STP 452*
 - wetting, adsorption, and bonding at glass fiber-coupling agent-resin interfaces (Johannson, Stark, Vogel, Laceyfield, Baney, and Flaningam), *STP 452*
- Glass-filament winding, the performance of glass-filament-wound pressure vessels with metal liners at cryogenic temperatures (Morris), *JOM*, December, 970
- Glass tests, the frequency-phase technique for damping measurements applied to several materials at elevated temperatures (Ainsworth and Moore), *MR&S*, October, 23
- Goan, J. C. and Prosen, S. P.: Interfacial bonding in graphite fiber-resin composites, *STP 452*
- Gold plates, determination of cobalt and impurities in gold plating solutions and gold plates by atomic absorption (Kapetan), *STP 443*
- Goldman, C. R.: see Armstrong, Richard and Goldman, C. R.
- Goldspiel, Solomon: Development of radiographic standards for castings, *MR&S*, July, 13
- Grant, C. L.: A comparison of atomic absorption with other spectrochemical methods, *STP 443*
- Graphite, interfacial bonding in graphite fiber-resin composites (Goan and Prosen), *STP 452*
- Gray, Hamilton: see Nair, Keshavan, Gray, Hamilton and Donovan, N. C.
- Gray iron castings
- ductile iron—our most versatile ferrous casting (Henderson), *STP 445*

field testing of components (Olberts and Tucker), STP 455
 gray iron—a unique engineering material (Krause), STP 455
 high factors of safety of usable design strengths (Caine), STP 455
 malleable iron (Heine), STP 455
 thermal fatigue resistance of gray cast iron, (Rostoker), JOM, December, 909
 Green, P. S., Church, J. M. and Eilers, G. J.: Differential ultrasonic visualization of impact fractures in glass-reinforced plastics, MR&S, October, 24
 Greenberg, J.: Neutron attenuation mechanisms in concrete shielding, JOM, June, 251
 Greszczuk, L. B.: Theoretical studies of the mechanics of the fiber-matrix interface in composites, STP 452

Guenther, A. H.: See Glass, A. J. and Guenther, A. H.

H

Haas, W. A.: Steiner tunnel furnace, MR&S, July, 29
 Hall, A. M.: Stainless steel as a material for art forms, STP 454
 Hall, E. R.: see Norman, T. E. and Hall, E. R.
 Ham, Inyong: See, Schmidt, A. O. and Ham, Inyong
 Hanna, T. H.: The mechanics of load mobilization in friction piles, JOM, December, 924
 Hansen, W. C.: Potential compound compositions of portland cements, JOM, September, 761

Harczar, F. G. and Rieger, R.: Determination of adhesion between rigid and flexible materials, MR&S, October, 31

Hardness, the IRSID hot hardness testing machine (Rabbe and Pomey), MR&S, August, 26

Harrod, D. L., Hengstenberg, T. F. and Manjoine, M. J.: Fracture toughness of beryllium, JOM, September, 618

Hartman, W. F.: Generalized parabolic work hardening during tensile deformation of brass, JOM, March, 104

Haslett, W. H.: See Stolki, T. J. and Haslett, W. H.

Heat exchanger tube welded heat exchanger tube and the application of alloy 194 to heat exchanger tube (Butt), MR&S, November, 15

Heine, H. J.: Malleable iron, STP 455

Henderson, H. E.: Ductile iron—our most versatile ferrous casting material, STP 455

Hengstenberg, T. F.: see Harrod, D. L., Hengstenberg, T. F. and Manjoine, M. J.

Henry, G.: see Roesch, L. and Henry, G. High temperature tests

a dynamic hot-corrosion rig testing procedure (Rentz, Walters, and Freeman), JOM, September, 520

high-temperature corrosion testing of valve alloys (Johnson and Wilde), JOM, September, 556

Highways

downdrag measurements on 270-ft composite piles (Bozozuk and Labrecque), STP 444

early hardening of asphaltic binder in bituminous pavement mixtures (Bright, Justice, and Steele), JOM, March, 231

Florida skid correlations study of 1967—skid testing with automobiles (Rizenbergs), STP 456

fracture of concrete (Moavenzadeh and Kuguel), JOM, September, 497

pavement dynamic permeability testing (Hutchinson, Kao, and Pendley), STP 456

skid testing (Whitehurst), MR&S, April, 20

Hill, U. T.: Determination of arsenic in steels, iron ores, and spelters by atomic absorption, STP 443

Hirsch, H. M.: see Airhart, T. P., Coyle, H. M., Hirsch, T. J. and Buchanan, S. J.

Ho, Michael M. K. and Burwash, W. J.: Vertical vibration of a rigid foundation resting on sand, STP 450

Hoffman, E. J.: Elongational flow, JOM, March, 28

Hofman, C. M. and Miller, R. L.: Resistance of passenger tires to atmospheric exposure, JOM, March, 31

Hopkinson pressure bar, dynamic shear stress-strain-strain rate relations of iron (Yen and Yew), JOM, June, 324

Housel, W. S.: Design of caissons on granular-cohesive soils, STP 444

Hsu, T. C.: A study of the compression test for ductile materials, MR&S, December, 20

Hudson, S. B.: see Steele, G. W. and Hudson, S. B.

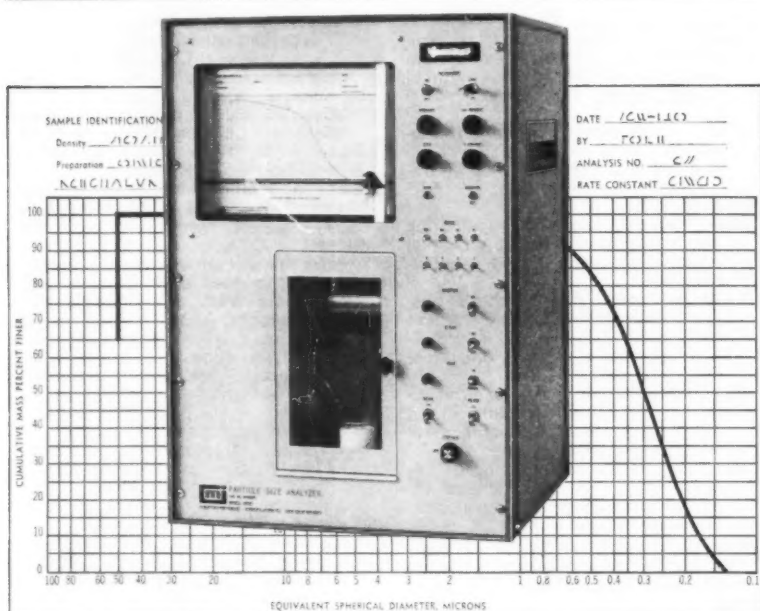
Hughes, C. S.: The use of a nuclear asphalt content gauge, STP 461

Human factors, the new reality in technology (DeCarlo), MR&S, February, 8

Hunter, A. H. and Davissn, M. T.: Measurements of pile load transfer, STP 444

Hutchinson, J. W., Kao, T. Y. and Pendley, L. C.: Pavement dynamic permeability testing, STP 456

Hydrocarbons, an improved viscosity-



here is every reliable sedimentation particle size analyzer available today!

There's only one...Micromeritics' Sedigraph Model 5000! A major breakthrough in particle size analysis...automatic, fast and accurate...0.1 to 100 microns diameter...at its very best subsieve to submicron, yet handles larger sizes with dispatch. Employs the classical method based on Stokes Law of sedimentation...yields results in minutes, not hours or days...automatically plots distribution as a cumulative mass percent finer versus equivalent spherical diameter on an easily read graph for aqueous or organic fluid systems...especially suitable for analysis of clays, pigments, fillers, metals and metal oxides, minerals, ceramics, etc...accuracy and repeatability better than 1.0%. No calibration or data reduction...no narrow range of operation...no liquid-liquid or liquid-surface interfaces...no easily clogged, fragile orifices. Single, compact desktop unit. Call, wire or write today for complete technical information. Micromeritics Instrument Corporation, 800 Goshen Springs Rd., Norcross, Ga. 30071 (metro Atlanta) phone (404) 448-8282.



micromeritics
 SURVEYORS OF THE MICROWORLD

FOR FURTHER INFORMATION CIRCLE 1431 ON READER SERVICE CARD

temperature chart for hydrocarbons (Wright), *JOM*, March, 19, errata, June, 493

Hydrogen embrittlement
effects of hydrostatic pressures on electrolytic hydrogen in iron (Nanis and DeLuccia), *STP* 445
effects of marine environment on high-strength steels (Wacker), *STP* 445

Hydrostatic stress
a study of the compression test for ductile materials (Hsu), *MR&S*, December, 20

I

Impact test
apparatus for impact testing of fluorinating agents (English and Spicer), *MR&S*, January, 17
a versatile plastic sheet impact tester (Cohen, Ferris, Mont, and Martins), *MR&S*, May, 21
the incline impact tester, a problem in evaluation reliability (McKinlay), *MR&S*, April, 25

Inclusions, detection of inclusions in bearing quality steel by the ultrasonic method (Meldrum), *MR&S*, September, 21

Indentation
the effect of vibration on microhardness testing (Kennedy and Marrotte), *MR&S*, November, 18
the nonlinear disparity in converting knoop to rockwell c hardness (Batchelder), *MR&S*, November, 27

Induction hardening, fatigue strength of induction hardened railway axles (Nishioka, Ishii, and Komatsu), *JOM*, March, 413

Industrial standards, the NBS contribution to technological measurements and standards (Kushner), *MR&S*, October, 8

Industrial water, manual on water, *STP* 442

Information retrieval, operations research and the measurement of materials (Bicking), *MR&S*, June, 8

Infrared detectors, infrared nondestructive inspection, a status report (Apple), *MR&S*, May, 10

Insecticides, analysis for organic pesticides in aquatic environments (Faust and Suffet), *STP* 448

Instrumentation, keeping up with the ever-expanding field of analytical instrumentation—a challenge to ASTM (Ballhaus), *MR&S*, July, 10

Insurance
an insurance engineer looks at products liability (Shankula), *MR&S*, December, 8

Interlaboratory precision, precision studies of ASTM thermal conductivity test for refractories (Wallace, Norton, Bart, and Brady), *MR&S*, September, 27

Iron
determination of arsenic in steels, iron ores, and spelters by atomic absorption (Hill), *STP* 443
dynamic shear stress-strain-strain rate relations of iron (Yen and Yew), *JOM*, June, 324
effects of hydrostatic pressures on electrolytic hydrogen in iron (Nanis and DeLuccia), *STP* 445
fractographic studies on the cleavage fracture of single crystals or iron (Kitajima and Futagami), *STP* 453

Ishii, K.:
Oda, N. and Nishioka, K.: Wear of high-speed railway wheels, *STP* 446
See Nishioka, K., Ishii, K. and Komatsu, H.

J

Jacoby, G. H.: Fracture surface and processes in polycarbonate, *STP* 453

Japp, R. D.: see Yong, R. N. and Japp, R. D.

Jasper, J. C. and Lawson, H. H.: Twenty-year atmospheric exposure data, *STP* 454

Johannson, O. K., Stark, F. O., Vogel, G. E., Lacefield, R. M., Baney, R. H. and Flaningam, O. L.: Wetting, absorption, and bonding at glass fiber-coupling agent-resin interfaces, *STP* 452

Johnson, A. L. and Kelsen, G. A.: Stainless steel in structural applications, *STP* 454

Johnson, V. A. and Wilde, R. A.: High-temperature corrosion testing of valve alloys, *JOM*, September, 556

Johnson, W. C.: see Fenske, E. R. and Johnson, W. C.

Joint simulators, bellows-activated joint simulators (Fetter), *MR&S*, July, 20

Jones, D. A. and Lowe, T. A.: Polarization methods for measuring the corrosion of metals buried underground, *JOM*, September, 600

Jones, G. M., Wiley, M. L. and Smith, R. F.: Vacuum extraction of bitumen from pavement mixtures, *STP* 461

Jones, M. H.: see Bubsey, R. T., Jones, M. H., and Brown, W. F., Jr.

Justice, Alan: see Bright, Richard, Justice, Alan and Steele, John

K

Kao, T. Y.: see Hutchinson, J. W., Kao, T. Y. and Pendley, L. C.

Kapetan, J. P.: Determination of cobalt and impurities in gold plating solutions and gold plates by atomic absorption, *STP* 443

Karr, M. H.: Effective management of water, land, and air resources, *MR&S*, August, 8

Karpati, K. K.: see Gibbons, E. V. and Karpati, K. K.

Kelly, A.: see Cooper, G. A. and Kelly, A.

Kelsen, G. A.: see Johnson, A. L. and Kelsen, G. A.

Kennedy, R. G. and Marrotte, N. W.: The effect of vibration on microhardness testing, *MR&S*, November, 18

Kimoto, S. and Russ, J. C.: The characteristics and applications of the scanning microscope, *MR&S*, January, 8

Kitajima, K. and Futagami, K.: Fractographic studies on the cleavage fracture of single crystals of iron, *STP* 453

Knoop hardness
the effect of vibration on microhardness, *MR&S*, November, 18
the nonlinear disparity in converting knoop to rockwell c hardness (Batchelder), *MR&S*, November, 27

Kohlmeyer, Jan: Deterioration of wood by marine fungi in the deep sea, *STP* 445

Komatsu, H.: see Nishioka, K., Ishii, K. and Komatsu, H.

Kopf, R. E.: see Robinson, W. H. and Kopf, R. E.

Koppes, W. F.: Design guidelines for architectural uses of stainless steel, *STP* 454

Kortovich, C. S.: see Collins, H. E. and Kortovich, C. S.

Krafft, J. M. (Chairman, Subcommittee 3, Committee E-24): Drop-weight tear test reproducibility examined *MR&S*, February, 11

Krause, D. E.: Gray iron—a unique engineering material, *STP* 455

Krizek, R. J. and Franklin, A. G.:

Nonlinear dynamic response of soft clay, *STP* 450

Torsional shear testing technique for dynamic properties of clay, *STP* 450

Kuguel, Roberto: see Moavenzadeh, Fred and Kuguel, Roberto

Kula, E. B. and Anttil, A. A.: Tempered martensite embrittlement and fracture toughness in SAE 4340 steel, *JOM*, December, 816

Kushner, L. M.: The NBS contribution to technological measurements and standards, *MR&S*, October, 8

L

Labrecque, Andre: see Bozozuk, Michael, and Labrecque, Andre

Lacefield, R. M.: see Johannson, O. K., Stark, F. O., Vogel, G. E., Lacefield, R. M., Baney, R. H. and Flaningam, O. L.

Lamellar structure, interfacial stability of eutectic composites (Salkind), *STP* 452

Laminates, fracture in laminated materials (Almond, Embury, and Wright), *STP* 452

Land, N. S.: A feasibility study of a technique for sorting particles by shape, *MR&S*, June, 26

Landes, J. D.: see Wei, R. P. and Landes, J. D.

Landgraf, R. W., Morrow, JoDean and Endo, T.: Determination of the cyclic stress-strain curve, *JOM*, March, 176

LaQue, F. L.: Stainless steel—what it is and what it will do, *STP* 454

Laser glass
damage in laser glass (Glass and Guenther), *MR&S*, November, 14

Larson, F. R.: see Carr, F. L. and Larson, F. R.

Lawson, H. H.: see Jasper, J. C. and Lawson, H. H.

Lee, K. L. and Fitton, J. A.: Factors affecting the cyclic loading strength of soil, *STP* 450

Leist, T. H.: see Lemon, J. R., Peter, A. F., Brown, D. L. and Leist, T. H.

Le May, I.: see Nair, K. D. and Le May, I.

Lemmon, D. C. and Sherby, O. D.: Effect of microstructure on the ductility of steel in torsion, *JOM*, June, 444

Lemon, J. R., Peter, A. F., Brown, D. L. and Leist, T. H.: Practical methods to obtain improved machine tool dynamic performance, *MR&S*, September, 31

Lewis, L. L.: A comparison of atomic absorption with some other techniques of chemical analysis, *STP* 443

Liability
an insurance engineer looks at products liability (Shankula), *MR&S*, December, 8

Lichtenberg, J. J.: see Smith, Doris and Lichtenberg, J. J.

Lime soil, engineering properties of lime-soil mixtures, (Thompson), *JOM*, December, 968

Lin, J. M.: see Chen, P. E. and Lin, J. M.

Lindberg, R. I.: Aluminator—three years later, *STP* 445

Load tests, load tests on long bearing piles (Darragh and Bell), *STP* 444

Logistic function, tables of the logistic function (McCrea), *JOM*, March, 210

Lowe, T. A.: see Jones, D. A. and Lowe, T. A.

Lumber, modulus of elasticity and bending-strength ratio as indicators of tensile strength of lumber (Orosz),

M

- Machine tool, practical methods to obtain improved machine tool dynamic performance (Lemon, Peter, Brown, and Leist), *MR&S*, September, 31
- Mackinney, H. W.: Comparison of sunlight and carbon arc exposure of polyesters by resulting chemical activity, *JOM*, March, 92
- Magnesium alloys, a fractographic study of precipitation hardened and dispersion strengthened magnesium-base alloys (Calhoun and Stoloff), *STP* 453
- Magnetic particle tests, definition of fatigue cracks through nondestructive testing (Packman, Pearson, Owens, and Young), *JOM*, September, 666
- Malleable iron castings
ductile iron—our most versatile ferrous casting (Henderson), *STP* 455
- field testing of components (Olberts and Tucker), *STP* 455
- gray iron—a unique engineering material (Krause), *STP* 455
- high factors of safety or usable design strengths (Caine), *STP* 455
- malleable iron (Heine), *STP* 455
- Man machine systems, the new reality in technology (DeCarlo), *MR&S*, February, 8
- Manjoine, M. J.: see Harrod, D. L., Hengstenberg, T. F. and Manjoine, M. J.
- Margason, B. E., McNeill, R. L. and Babcock, F. M.: Case histories in foundation vibrations, *STP* 450
- Marine corrosion
effects of marine environment on high-strength steels (Wacker), *STP* 445
- Aluminaut—three years later (Lindberg), *STP* 445
- Marine environment
effect of deep-ocean environment on plastics (Muraoka), *STP* 445
- influence of a synthetic seawater environment on the fracture behavior of HP 9-4-25 and HP 9-4-20 alloy steels (Clark and Wessel), *STP* 445
- Marine organisms
deterioration of wood by marine fungi in the deep sea (Kohlmeier), *STP* 445
- the information background in the field of biological deterioration of nonmetallic materials (Wessel), *STP* 445
- Mark, H. L.: See Turk, A., Mark, H. L., and Mehlman, S.
- Markwardt, L. J.: Evaluating structural wood, new method for establishing clear wood strength values, *MR&S*, August, 17
- Marrotte, N. W.: See Kennedy, R. G. and Marrotte, N. W.
- Martensite, tempered martensite embrittlement and fracture toughness in SAE 4340 steel (Kula and Antcl), *JOM*, December, 816
- Martensitic stainless steels, thermal fatigue resistance of martensitic steels (Rostoker), *JOM*, March, 117
- Martins, J. G.: see Cohen, S. M., Ferris, T. J., Mont, G. E. and Martins, J. G.
- Mass spectroscopy
spark source mass spectrometry (Escher), *MR&S*, June, 19
- tables of the logistic function (Mc-Crea), *JOM*, March, 210
- Maxwell, A. A., Fry, Z. B. and Poplin, J. K.: Vibratory loading of pile foundations, *STP* 444

destined
to become the
**MOST COPIED
DYNAMIC TEST MACHINE**
BECAUSE OF THESE CGS
DESIGN INNOVATIONS

*
Bumpless
transfer closed
loop control on
load, strain and
displacement

Motor driven
adjustable
crosshead

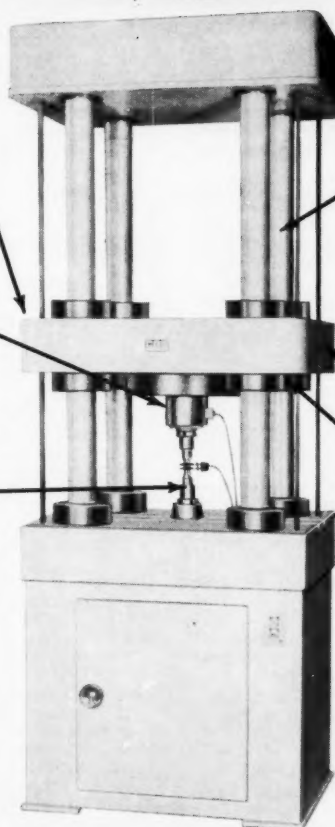
Load cell
adjustable
for axial
alignment

Hydrostatic
bearings in
actuator
eliminate friction
and galling . . .
maintain precise
axial loading

*
High level DC
analog signals for
control, readout
and limit
detection

*
Flooded suction
hydraulic pump
units with
stainless steel
reservoir

MODEL 114-125



Special fatigue
threaded load
columns

MAJOR SAFETY
FEATURE:
Adjustable
crosshead
cannot drop
inadvertently and
cause product
damage or
personnel injury

Unique locking
collar design

T-Slotted table

*
Reset control
gives static
performance
paralleling
mechanical
machines

*
HIGHEST
PERFORMANCE,
LOWEST COST
TEST MACHINE
OF ITS TYPE ON
THE MARKET

**FURNISHED WITH CONTROL CONSOLE, HYDRAULIC
ACTUATOR & HYDRAULIC POWER SUPPLY**

REQUEST BROCHURE FOR COMPLETE INFORMATION

LAWRENCE DIVISION

CGS

SCIENTIFIC CORPORATION

INDUSTRIAL BLVD., SOUTHAMPTON, PA. 18966 • (215) 355-5500

C 107

FOR FURTHER INFORMATION CIRCLE 1434 ON READER SERVICE CARD

DECEMBER 1969 / 63

McCrea, J. M.: Tables of the logistic function, *JOM*, March, 210

McDonald, V. J. M.: see Davison, M. T. and McDonald, V. J. M.

McKinlay, A. H.: The incline impact tester, a problem in evaluation reliability, *MR&S*, April, 25

McNeill, R. L.: see Margason, B. E., McNeill, R. L. and Babcock, F. M.

Measurement, history of measurement and the SI units (Stiehler), *MR&S*, June, 14

Mehlman, S.: see Turk, A., Mark, H. L., and Mehlman, S.

Meinke, W. W.: The NBS standard reference materials program: past, present, and future, *MR&S*, October, 15

Meldrum, Gordon (E-4, Sub IX, Ultrasonic T. G.): Detection of inclusions in bearing quality steel by the ultrasonic method, *MR&S*, September, 21

Metalworking, advances in the theory of explosive metalworking (Ezra), *JOM*, June, 338

Meyer, W. E. and Schrock, M. O.: Review of test methods for tire friction characteristics, *JOM*, March, 44

Microhardness
the effect of vibration on microhardness testing (Kennedy and Marrotte), *MR&S*, November, 18
the nonlinear disparity in converting knoop to rockwell c hardness (Batchelder), *MR&S*, November, 27

Microorganisms
freeze concentration of microorganisms in water (Baker), *STP* 448
the information background in the field of biological deterioration of nonmetallic materials (Wessel), *STP* 445
microbes and microorganisms in water—a review (Tallon), *STP* 448
uptake and assimilation of nitrogen in microecological systems (Ehrlich and Slack), *STP* 448

Microstructure
characterization and thermal stability of nickel-base superalloys (Collins and Kortovich), *JOM*, March, 62
effect of microstructure on the ductility of steel in torsion (Lemmon and Sherby), *JOM*, June, 444

Miller, Harvey: Fire retardant paints, *MR&S*, August, 33

Miller, R. L.: see Hofmann, C. M. and Miller, R. L.

Minshull, J. A.:
Nomogram for the calculation of shear stress, rate of shear, and viscosity from sliding plate microviscometer data, *JOM*, June, 408
Note on the geometry of the sliding plate microviscometer, *JOM*, June, 372

Moavenzadeh, Fred and Kuguel, Roberto: Fracture of concrete, *JOM*, September, 497

Modulus of elasticity, modulus of elasticity and bending-strength ratio as indicators of tensile strength of lumber, (Orosz), *JOM*, December, 842

Molten salts, electrode potential measurements of nickel-base alloys in molten salts (Doering), *JOM*, June, 457

Molybdenum, determination of trace amounts of molybdenum (Armstrong and Goldman), *STP* 448

Mont, T. J.: see Cohen, S. M., Ferris, T. J., Mont, G. E. and Martins, J. G.

Moon, D. M.: see Bates, R. C., Clark, W. G., Jr. and Moon, D. M.

Moore, R. E.: see Ainsworth, J. H. and Moore, R. E.

Morris, E. E.: The performance of glass-filament-wound pressure vessels with

metal liners at cryogenic temperatures, *JOM*, December, 970

Morrow, JoDean:
see Endo, T. and Morrow, JoDean
see Landgraf, R. W., Morrow, JoDean and Endo, T.
see Topper, T. H., Sandor, B. I. and Morrow, JoDean
see Topper, T. H., Wetzel, R. M. and Morrow, JoDean

Mulholland, J. A.: see France, W. D., Trout, D. E. and Mulholland, J. A.

Mullen, Buell: Art on stainless steel, *STP* 454

Mullen, C. X.: see Schmitt, R. J. and Mullen, C. X.

Muraoka, J. S.: Effect of deep-ocean environment on plastics, *STP* 445

N

Nair, K. D. and Le May, I.: Use of electron microfractography in interpreting the mechanisms of fatigue crack propagation, *STP* 453

Nair, Keshavan:
Dynamic and earthquake forces on deep foundations, *STP* 444

Gray, Hamilton and Donovan, N. C.: Analyses of pile group behavior, *STP* 444

National Bureau of Standards
the NBS contribution to technological measurements and standards (Kushner), *MR&S*, October, 8
the NBS standard reference materials program: past, present, and future (Meinke), *MR&S*, October, 15
the national measurement system—a concept to assist in the private sector (Silverman), *MR&S*, October, 11
the national standard reference data system (Brady), *MR&S*, October, 19

National measurement system,
the national measurement system—a concept to assist in the private sector (Silverman), *MR&S*, October, 11

Nanis, Leonard and DeLuccia, J. J.: Effects of hydrostatic pressures on electrolytic hydrogen in iron, *STP*, 445

Neuman, R. C.: Does the angle of exposure to the sun make a difference, *MR&S*, June, 38

Neutron absorption neutron attenuation mechanisms in concrete shielding (Greenberg), *JOM*, June, 251

Neutron irradiation, fracture toughness of beryllium (Harrod, Hengstenberg, and Manjoine), *JOM*, September, 618

Neutron moderation, asphalt content by neutron moderation (Steele and Fisher), *STP* 461

Neville, A. M.: Behavior of concrete in saturated and weak solutions of magnesium sulphate or calcium chloride, *JOM*, December, 780

Nickel-base superalloys, characterization and thermal stability of nickel-base superalloys (Collins and Kortovich), *JOM*, March, 62

Nishioka, K.:
Ishii, K. and Komatsu, H.: Fatigue strength of induction hardened railway axles, *JOM*, June, 413
see Ishii, K., Oda, N. and Nishioka, K.

Nitrogen, solid solubility of nitrogen in various commercial austenitic stainless steels (Cox and Eckel), *JOM*, June, 82

Nondestructive testing
asphalt content by neutron moderation (Steele and Fisher), *STP* 461

fatigue cracks, definition through nondestructive testing (Packman, Pearson, Owens, and Young), *JOM*, September, 666

equivalence of ASTM reference radiographs for steel castings (Crisculo), *MR&S*, May, 14

infrared nondestructive inspection, a status report (Apple), *MR&S*, May, 10

nuclear asphalt content gauge, the use of (Hughes), *STP* 461

radiographic standards, development of for castings (Goldspiel), *MR&S*, July, 13

tracer gas nondestructive testing of activated carbon cells (Turk, Mark, and Mehlman), *MR&S*, November, 24

wanted: new nondestructive techniques for evaluating materials performance, an interview with Jerome Persh (Persh), *MR&S*, May, 8

Noone, M. J., Feingold, E. and Sutton, W. H.: The importance of coatings in the preparation of Al₂O₃ filament/metal-matrix composites, *STP* 452

Norman, T. E. and Hall, E. R.: Abrasive wear of ferrous materials in climax operations, *STP* 446

Norton, C. L., Jr.: see Wallace, R. W., Norton, C. L., Jr., Bart, R. K. and Brady, J. G.

Notch testing, stress and strain distribution in a tension specimen with a circumferential notch (Clausing), *JOM*, September, 566

Novak, S. R. and Rolfe, S. T.: Modified WOL specimen for K_{1c} environmental testing, *JOM*, September, 701

Nuclear testing, the use of a nuclear asphalt content gauge (Hughes), *STP* 461

O

Oceans
development of a buoyancy material for the deep submergence search vehicle (Vath and Colletti), *JOM*, December, 948
effect of deep-ocean environment on plastics (Muraoka), *STP* 445
effects of the deep-sea environment on battery materials and characteristics (Work), *STP* 445

Octane numbers, a new measure for octane rating (Fenske and Johnson), *MR&S*, October, 32

Oda, N.: see Ishii, K. Oda, N. and Nishioka, K.

O'Donnell, R. J.: Equations for converting different viscosity units, *MR&S*, May, 25

Odors, reviews of correlations of objective-subjective methods in the study of odors and taste, *STP* 451

Olberts, D. R. and Tucker, L. E.: Field testing of components, *STP* 455

Operation research, operations research and the measurement of materials (Bicking), *MR&S*, June, 8

Organic compounds
fluorescence techniques in detection of organics in water (Christman and Aronquist), *STP* 448
molybdenum, determination of trace amounts of (Armstrong and Goldman), *STP* 448
phenols, determination of, in surface waters by thin-layer chromatography (Smith and Lichtenberg), *STP* 448

Orosz, Ivan: Modulus of elasticity and bending-strength ratio as indicators of tensile and strength of lumber, *JOM*, December, 842

Ota, Massakazu: Functional specimen of the tension tests of rubber, *JOM*, June, 437

Outwater, J. O. and Austin, L. E.: Effect of external hydrostatic pressure on damaged glass hydrospheres, *STP* 445

Owens, J. S.: see Packman, P. F., Pearson, H. S., Owens, J. S. and Young, G.

Ozone resistance, resistance of passenger tires to atmospheric exposure (Hofmann and Miller), *JOM*, March, 31

P

Packaging, the incline impact tester, a problem in evaluation reliability (McKinlay), *MR&S*, April, 25

Packman, P. F., Pearson, H. S., Owens, J. S. and Young, G.: Definition of fatigue cracks through nondestructive testing, *JOM*, September, 666

Parr, C. H.: see Cost, T. L. and Parr, C. H.

Pavements

engineering properties of lime-soil mixtures (Thompson), *JOM*, December, 968

Florida skid correlation study of 1967 —skid testing with automobiles (Rizenbergs), *STP* 456

Florida skid correlation study of 1967 —skid testing with trailers (Smith and Fuller), *STP* 456

pavement dynamic permeability testing (Hutchinson, Kao, and Pendley), *STP* 456

skid testing (Whitehurst), *MR&S*, April, 20

Paxton, H. W.: see Procter, R. P. M. and Paxton, H. W.

Pearson, H. S.: see Packman, P. F., Pearson, H. S., Owens, J. S. and Young, G.

Pendley, L. C.: see Hutchinson, J. W., Kao, T. Y. and Pendley, L. C.

Performance

the language of performance (Blake), *MR&S*, March, 11

materials performance, wanted: new nondestructive techniques for evaluating, an interview with Jerome Persh (Persh), *MR&S*, May, 8

past president Clair talks about performance (Clair), *MR&S*, March, 8

performance and the consumer product industry (Stoll), *MR&S*, March, 15

practical methods to obtain improved machine tool dynamic performance (Lemon, Peter, Brown, and Leist), *MR&S*, September, 31

Persh, Jerome: Wanted: new nondestructive techniques for evaluating materials performance, an interview with Jerome Persh, *MR&S*, May, 8

Pesticides, analysis for organic pesticides in aquatic environments (Faust and Suffet), *STP* 448

Peter, A. F.: see Lemon, J. R., Peter, A. F., Brown, D. L. and Leist, T. H.

Petroleum products, an improved viscosity-temperature chart for hydrocarbons (Wright), *JOM*, March, 19

Phosphor bronzes, fatigue characteristics of five copper-base strip alloys commonly used for spring applications (France, Trout, and Mulholland), *JOM*, September, 633

Photoelasticity, structures problem-solving in the photoelastic laboratory (Sampson), *MR&S*, March, 19

Piles and pile driving

analyses of pile group behavior (Keshavan, Gray, and Donovan), *STP* 444

downdrag measurements on 270-ft composite piles (Bozozuk and Labrecque), *STP* 444

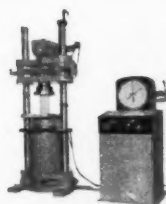
TORSEEE's

The Most Trusted Name in Testing Machines

PRECISION ENGINEERED TO THE HIGHEST REQUIREMENTS OF LABORATORY TECHNICIANS



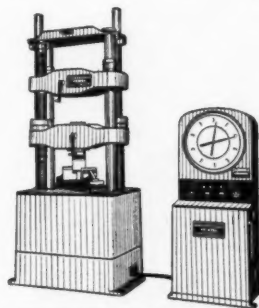
METAL IMPACTING TESTER
Type C.I. No. 30
30kg-M and 0.3kg-M with chamy system.



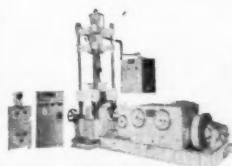
COMPRESSION TESTING MACHINE
Type AC No. 200A & 100A
Hydraulic, heavy duty type machine for compression and bending test of concrete or masonry specimen.



UNIVERSAL TESTING MACHINE
Type AU No.100-A
Available 5 ~ 100 ton models. Stable hydraulic machine for tension, compression, bending and other relative test.



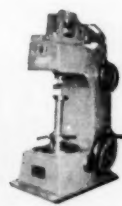
UNIVERSAL TESTING MACHINE
Type RAT-100
Available 10~200 ton models. Offers high performance and versatility in compression, tension, deflection and bending test.



CAMPLASTOMETER
Type CP-100B
Available 10~100 ton models. For accurate determination of the deformation and resistivity of metal, plastic & rubber material in plastic-process at ordinary or high temperature.



MICRO HARDNESS TESTER
Type MVH No. 1
Attains high-precision hardness testing in minute spot without impairing the surface.



BRINELL HARDNESS TESTER
Type BH No.3-WL
Compact and simple operation. Max. Load 3,000 kg. Variable every 250 kg.

For further information, write today.

TOKYO TESTING MACHINE MFG. CO., LTD.

No. 27-5, 5-chome, Shiba, Minato-ku, Tokyo, Japan
Cable Address: "TORSEETEST" TOKYO
Factory: Toyohashi-city, Aichi-pref.
Branch: Osaka, Kyushu.



東京試験機製作所

FOR FURTHER INFORMATION CIRCLE 1435 ON READER SERVICE CARD

- driving resistance and bearing capacity of vibro-driven model piles (Schmid), *STP 444*
- dynamic and earthquake forces on deep foundations (Keshavan), *STP 444*
- energy measurements for a diesel hammer (Davisson and McDonald), *STP 444*
- experiments with instrumented pile groups in sand (Vesic), *STP 444*
- instrumentation and downdrag (Crawford), *STP 444*
- lateral load tests on instrumental timber piles (Alizadeh), *STP 444*
- load tests on long bearing piles (Daragh and Bell), *STP 444*
- load transfer, lateral loads, and group action of deep foundations (Vesic), *STP 444*
- measurements of pile load transfer (Hunter and Davisson), *STP 444*
- the mechanics of load mobilization in friction piles (Hanna), *JOM*, December, 924
- pile-soil system response in a cohesive soil (Airhart, Coyle, Hirsch, and Buchanan), *STP 444*
- soil behavior from analysis of tests of uninstrumented piles under lateral loading (Reese and Cox), *STP 444*
- vibratory loading of pile foundations (Maxwell, Fry, and Poplin), *STP 444*
- Pincus, George: see Franca, G. de C. and Pincus, George
- Plastic deformation
- a survey of compression creep testing of metals (Cutton), *MR&S*, April, 11
 - yielding and plastic instability under biaxial stress in design of metal pressure vessels (Sines), *JOM*, June, 377
- Plastics
- does the angle of exposure to the sun make a difference (Neuman), *MR&S*, June, 38
 - effect of deep-ocean environment on plastics (Muraoka), *STP 445*
 - fracture surface and processes in polycarbonate (Jacoby), *STP 453*
 - rubber-modified, current research on the structure and mechanical properties of rubber-modified thermoplastics (Bucknall), *JOM*, March, 214
 - a versatile plastic sheet impact tester (Cohen, Ferris, Mont, and Martins), *MR&S*, May, 21
 - scratch and abrasion testing of transparent plastics (Wiinikainen), *MR&S*, December, 17
- Polarization measurements
- controlled potential corrosion tests, their applications and limitations (France), *MR&S*, August, 21
 - importance of mass transfer in determining the corrosion rate of aluminum using polarization measurements (Craig and Scott), *JOM*, September, 540
- Polycarbonate resins, fracture surface and processes in polycarbonate (Jacoby), *STP 453*
- Polyesters
- comparison of sunlight and carbon arc exposure of polyesters by resulting chemical activity (Mackinney), *JOM*, March, 92
 - wetting, adsorption, and bonding at glass fiber-coupling agent-resin interfaces (Johannson, Stark, Vogel, Lacefield, Baney, and Flaningam), *STP 452*
- Polymers
- analysis of the biaxial strip test for polymeric materials (Cost and Parr), *JOM*, June, 312
 - effect of water on glass fiber-resin bonds (Eakins), *STP 452*
 - films, a versatile plastic sheet impact tester (Cohen, Ferris, Mont, and Martins), *MR&S*, May, 21
 - improved variable strain bending form for determining the environmental craze resistance of polymers (Stolki and Haslett), *MR&S*, December, 32
 - measurement of the fiber-polymer matrix interfacial strength (Broutman), *STP 452*
 - wetting, adsorption, and bonding at glass fiber-coupling agent-resin interfaces (Johannson, Stark, Vogel, Lacefield, Baney, and Flaningam), *STP 452*
- Pomey, G.: see Rabbe, P. and Pomey, G.
- Poplin, J. K.: see Maxwell, A. A., Fry, Z. B. and Poplin, J. K.
- Popovics, Sándor: Effect of porosity on the strength of concrete, *JOM*, June, 356
- Porosity, effect of porosity on the strength of concrete (Sandor), *JOM*, June, 356
- Portland cements, potential compound compositions of portland cements (Hansen), *JOM*, September, 761
- Precision
- general sampling theory (Visman), *MR&S*, November, 8
- Prefabricated buildings, a recorder to measure the joint movement in a building (Gibbons and Karpati), *MR&S*, April, 18
- Pressure vessels
- elevated-temperature strength data, evaluation of (Smith), *JOM*, December, 878
 - experimental biaxial strength of structural alloys with theoretical predictions, a comparison of (Rawe and Corn), *JOM*, March, 3
 - glass-filament-wound pressure vessels with metal liners at cryogenic temperatures, the performance of (Morris), *JOM*, December, 970
 - hydrostatic pressures, effects of electrolytic hydrogen in iron (Nanis and DeLuccia), *STP 445*
 - yielding and plastic instability under biaxial stress in design of metal pressure vessels (Sines), *JOM*, June, 377
- Primary standards
- the NBS contribution to technological measurements and standards (Kushner), *MR&S*, October, 8
 - the NBS standard reference materials program: past, present, and future (Meinke), *MR&S*, October, 15
- Prince, K. D. and Richman, M. H.: Direct observation of the effect of particle size on dispersion hardening, *JOM*, March, 145
- Procter, R. P. M. and Paxton, H. W.: Stress corrosion of aluminum alloy 7075-T 651 in organic liquids, *JOM*, September, 729
- Product inspection, tort liability of independent testing agencies (Shelden), *MR&S*, January, 17
- Prosen, S. P.: see Goan, J. C. and Prosen, S. P.
- Pycnometer, a pycnometer test procedure for determining asphalt content of paving mixture (Steele and Hudson), *STP 461*
- Quantitative, spark source mass spectrometry (Escher), *MR&S*, June, 19
- Quets, J. M. and Dresher, W. H.: Thermochemistry of the hot corrosion of superalloys, *JOM*, September, 583
- R
- Rabbe, P. and Pomey, G.: The IRSID hot hardness testing machine, *MR&S*, August, 26
- Radiation shielding
- neutron attenuation mechanisms in concrete shielding (Greenborg), *JOM*, March, 251
- Radioactive (Water)
- manual on water, *STP 442*
- Radiography
- development of radiographic standards for casting (Goldspiel), *MR&S*, July, 13
- Railroads
- fatigue strength of induction hardened railway axles (Nishioka, Ishii, and Komatsu), *JOM*, June, 413
- Rains, T. C.: Chemical aspects of atomic absorption, *STP 443*
- Ramirez-Munoz, J.: see Ulrich, W. F., and Ramirez-Munoz, J.
- Rattner, Fred: see Bendtsen, B. A. and Rattner, Fred
- Rawe, R. F. and Corn, D. L.: A comparison of the experimental biaxial strength of structural alloys with theoretical prediction, *JOM*, March 3
- Reaction initiation, apparatus for impact testing of fluorinating agents (English and Spicer), *MR&S*, January, 17
- Reed, Albert: Determination of particle size, *MR&S*, June, 25
- Refractories
- precision studies of ASTM thermal conductivity test for refractories (Wallace, Norton, Bart, and Brady), *MR&S*, September, 27
- Reese, L. C., and Cox, W. R.: Soil behavior from analysis of tests of uninstrumented piles under lateral loading, *STP 444*
- Redwood
- equations for converting different viscosity units (O'Donnell), *MR&S*, May, 25
- Reference Radiographs
- equivalence of ASTM reference radiographs for steel castings (Crisculo), *MR&S*, May 14
- Reinforced plastics
- measurement of the fiber-polymer matrix interfacial strength (Broutman), *STP 452*, 27
- Rentz, W. A., Walters, J. J., and Freeman, W. R., Jr.: A dynamic hot-corrosion rig testing procedure, *JOM*, September, 520
- Repko, A. J.: see Fisher, D. M. and Repko, A. J.
- Residual stress
- residual stresses in an overstrained thick-walled cylinder as affected by stress relief treatment (Acquaviva), *JOM*, June, 286
- Resources research:
- fire retardant paints (Miller), *MR&S*, August, 33
- Richman, M. H.: see Prince, K. D. and Richman, M. H.
- Rieger, R.: see Harcsar, F. H. and Rieger, R.
- Rizenbergs R. L.: Florida skid correlation study of 1967—skid testing with automobiles, *STP 456*
- Rigo, J. H.: Fatigue life of weathered stainless steel wire reported, *STP*

Q

- Quality control
- an insurance engineer looks at products liability (Shankula), *MR&S*, De-

454, 137

Road Tests

testing tires for resistance to impact, shock, and cuts (Dobie), *MR&S*, March, 24

Roberts, Ernest Jr.: Elastic crack-edge displacements for the compact tension specimen, *MR&S*, February, 27

Robinson, W. H. and Kopf, R. E.: Evaluation of the horizontal pull slip-meter, *MR&S*, July, 22

Rockwell c

the nonlinear disparity in converting knoop to rockwell c hardness (Batchelder), *MR&S*, November, 27

Roesch, L. and Henry, G.: Relationship between precipitation and dimple fracture in an 18 percent nickel maraging steel, *STP* 453, 3

Rolfe, S. T.: see Novak, S. R. and Rolfe, S. T.

Romans, H. B.: An accelerated laboratory test to determine the exfoliation corrosion resistance of aluminum alloys, *MR&S*, November, 31

Rostoker, W.: Thermal fatigue resistance of gray cast iron, *JOM*, December, 909

Thermal fatigue resistance of martensitic steels, *JOM*, March, 117

Rubber

functional specimen of the tension test of rubber (Outa), *JOM*, June, 437

Russ, J. C.: see Kimoto, S. and Russ, J. C.

S

Salkind, M. J.: Interfacial stability of eutectic composites, *STP* 452

Salley, J. R.: see Davisson, M. T. and Salley, J. R.

Salomon, G. and deGee, A. W. J.: Wear research in Europe, *STP* 446

Sample, method for determining sample size when deriving tolerance limits for a timber species (Bendtsen and Rattner), *MR&S*, June, 30

Sampling

a general sampling theory (Visman), *MR&S*, November, 8

Sampson, R. C.: Structures problem-solving in the photoelastic laboratory, *MR&S*, March, 19

Sand, vertical vibration of a rigid foundation resting on sand (Ho and Burwash), *STP* 450

Sandor, B. I.: see Topper, T. H., Sandor, B. I. and Morrow, JoDean

Saybolt, equations for converting different viscosity units (O'Donnell), *MR&S*, May, 25

Scanning, the characteristics and applications of the scanning microscope (Kimoto and Russ), *MR&S*, January, 8

Schmid, W. E.: Driving resistance and bearing capacity of vibrodriven model piles, *STP* 444

Schmidt, A. O. and Ham, Inyong: Experimental and theoretical evaluation of tool wear, *JOM*, December, 1005

Schmitt, R. J. and Mullen, C. X.: Influence of chromium on the atmospheric-corrosion behavior of steel, *STP* 454

Schrock, M. O.: see Meyer, W. E. and Schrock, M. O.

Schroeder, W. L. and Schuster, R. L.: Laboratory simulation of seismic activity in saturated sands, *STP* 450

Schuster, R. L.: see Schroeder, W. L. and Schuster, R. L.

Scott, J. R.: see Craig, H. L., Jr. and Scott, J. R.

Screens, determination of particle size (Reed), *MR&S*, June, 25

Sealing systems, bellows-activated joint simulators (Fetter), *MR&S*, July, 20

Seawater corrosion, aluminum alloys after five years in seawater (Ailor), *STP* 445

Seed, H. B.: see Thiers, G. R. and Seed, H. B.

Serviceability, performance and the consumer product industry (Stoll), *MR&S*, March, 15

Shankula, R. E.: An insurance engineer looks at products liability, *MR&S*,

December, 8

Shear stress, nomogram for the calculation of shear stress, rate of shear, and viscosity from sliding plate microviscometer data (Minshull), *JOM*, June, 408

Shelden, A. N.: Tort liability of independent testing agencies, *MR&S*, January, 17

Sherby, O. D.: see Lemmon, D. C. and Sherby, O. D.

SI Units,

history of measurement and the SI units (Stieheler), *MR&S*, June, 14



OUTDOOR EXPOSURE...
is fine if you have time



But the ATLAS WEATHER-OMETER® can give you comparable results in a fraction of the time.

The versatile Type W frame has broadened its modular concept. It is now available with any of the Atlas standard light sources: 6000 W. Xenon Arc, Sunshine Arc, Enclosed Carbon Arc.

This building block design allows purchase of a basic unit and later field installations of additional controls and features.



ATLAS
ELECTRIC
DEVICES
COMPANY

Designed to hold up to 70 individual 2 3/4" x 8" specimens, the Atlas Type W Weather-Ometers include as standard equipment thermistor temperature controls, an electric humidifier, automatic program controls, specimen spray simulating rain and providing thermal shock plus many user conveniences. Modular additions include automatic humidity control, 2 pen chart recorder, air and water refrigeration and/or heaters for extended temperatures and a complete line of atmospheric contaminant controls to introduce ozone, sulfur dioxide and oxides of nitrogen into the test chamber. Test results give dependable correlation and repeatability. Atlas Weather-Ometers are used in laboratories all over the world where test programs of the ASTM, ISO, AATCC plus other government and industrial specifications are conducted. Write for our new catalog.

4114 N. RAVENSWOOD AVE. CHICAGO, ILL., U.S.A. 60613
PHONE 312-327-4520 / CABLE: ATLEDECO

- Sieves
determination of particle size (Reed), *MR&S*, June, 25
a feasibility study of a technique for sorting particles (Land), *MR&S*, June, 26
Manual on test sieving methods, *STP* 447
- Silicon carbide, interfacial stability of silicon carbide coated boron filament reinforced metals (Basche), *STP* 452
- Silverman, Shirleigh: The national measurement system—a concept to assist in the private sector, *MR&S*, October, 11
- Simpson, J. A.: Electron impact spectrometry for gas phase chemical analysis, *MR&S*, August, 13
- Simulation, operations research and the measurement of materials (Bicking), *MR&S*, June, 8
- Sines, George: Yielding and plastic instability under biaxial stress in design of metal pressure vessels, *JOM*, June, 377
- Skid resistance
the cornering capacity of studded tires (Whitehurst), *STP* 456
Florida skid correlation study of 1967—skid testing with trailers (Smith and Fuller), *STP* 456
Florida skid correlation study of 1967—skid testing with automobiles (Rizenbergs), *STP* 456
pavement dynamic permeability testing (Hutchinson, Kao, and Pendley), *STP* 456
skid testing (Whitehurst), *MR&S*, April, 20
- Slack, K. V.: see Ehrlich, G. G. and Slack, K. V.
- Smith, C. L.: see Brewer, P. G., Spencer, D. W. and Smith, C. L.
- Smith, Doris and Lichtenberg, J. J.: Determination of phenols in surface waters by thin-layer chromatography, *STP* 448
- Smith, G. V.: Evaluation of elevated-temperature strength data, *JOM*, December, 878
- Smith, L. L. and Fuller, S. L.: Florida skid correlation study of 1967—skid testing with trailers, *STP* 456
- Smith, R. F.: see Jones, G. M., Wiley, M. L. and Smith, R. F.
- Social change, the new reality in technology (DeCarlo), *MR&S*, February, 8
- Soil dynamics
case histories in foundation vibrations (Margason, McNeill, and Babcock), *STP* 450
factors affecting the cyclic loading strength of soil (Lee and Fitton), *STP* 450
laboratory simulation of seismic activity in saturated sands (Schroeder and Schuster), *STP* 450
nonlinear dynamic response of soft clay (Krzek and Franklin), *STP* 450
soil studies for seismic design of San Francisco Transbay Tube (Aisks and Tarshansky), *STP* 450
strength and stress-strain characteristics of clays subjected to seismic loading conditions (Thiers and Seed), *STP* 450
stress-strain behavior of clays in dynamic compression (Yong and Japp), *STP* 450
- Soil mechanics
load transfer, lateral loads, and group action of deep foundations (Vesic), *STP* 444
- Soil Mechanics
soil behavior from analysis of tests of uninstrumented piles under lateral loading (Reese and Cox), *STP* 444
soil studies for seismic design of San Francisco Transbay Tube (Aisks and Tarshansky), *STP* 450
torsional shear testing technique for dynamic properties of clay (Krzek and Franklin), *STP* 450
vertical vibration of a rigid foundation resting on sand (Ho and Burwash), *STP* 450
- Soils
the mechanics of load mobilization in friction piles, (Hanna), *JOM*, December, 924
pile-soil system response in a cohesive soil (Airhart, Coyle, Hirsch, and Buchanan), *STP* 444
- Sorting, a feasibility study of a technique for sorting particles (Land), *MR&S*, June, 26
- Specifications
the language of performance (Blake), *MR&S*, March, 11
operations, research and the measurement of materials (Bicking), *MR&S*, June, 8
Past President Clair talks about performance (Clair), *MR&S*, March, 8
using ASTM specifications in industrial material specifications (Turner), *MR&S*, April, 8
- Spectrochemical analysis
a comparison of atomic absorption with other spectrochemical methods (Grant), *STP* 443
tables of the logistic function (Mc-Crea), *JOM*, March, 210
- Spencer, D. W.: see Prewer, P. G., Spencer, D. W. and Smith, C. L.
- Spicer, D. R.: see English, W. D. and Spicer, D. R.
- Spitzig, W. A.: Correlations between fractographic features and plane-strain fracture toughness in an ultrahigh-strength steel, *STP* 453
- Split cylinder test, the distribution of concrete strains in the split cylinder test (Franca and Pincus), *JOM*, June, 393
- Stainless steel
the alumilene stainless-steel entrance system (Bienenfeld), *STP* 454
art on stainless steel (Mullen), *STP* 454
design guidelines for architectural uses of stainless steel (Koppes), *STP* 454
elevated-temperature strength data, evaluation of (Smith), *JOM*, December, 878
fatigue life of weathered stainless steel wire reported (Rigo), *STP* 454
influence of chromium on the atmospheric-corrosion behavior of steel (Schmitt and Mullen), *STP* 454
stainless steel as a material for art forms (Hall), *STP* 454
stainless steel in structural applications (Johnson and Kelsen), *STP* 454
stainless steel—what it is and what it will do (LaQue), *STP* 454
twenty-year atmospheric exposure data (Jasper and Lawson), *STP* 454
- Standardization
development and evaluation of standard test methods, the role of statistical design of experiments (Wernimont), *MR&S*, September, 8
Past President Clair talks about performance (Clair), *MR&S*, March, 8
the NBS standard reference materials program: past, present, and future (Meinke), *MR&S*, October, 15
Stark, F. O.: see Johansson, O. K., Stark, F. O., Vogel, G. E., Laceyfield, R. M., Baney, R. H. and Flaningam, O. L.
- Statistics
development and evaluation of standard test methods, the role of statistical design of experiments (Wernimont), *MR&S*, September, 8
a general sampling theory (Visman), *MR&S*, November, 8
tables of the logistic function (Mc-Crea), *JOM*, March, 210
- Steel
a comparison of elevated temperature tensile fractures in nonleaded and leaded 4145 steel (Zipp, Warke, and Breyer), *STP* 453
correlations between fractographic features and plane-strain fracture toughness in an ultrahigh-strength steel (Spitzig), *STP* 453
correlation of fractographic features with fracture mechanics data (Bates, Clark, and Moon), *STP* 453
cumulative fatigue damage under cyclic strain control (Topper, Sandor, and Morrow), *JOM*, March, 189
cyclic stress-strain and fatigue behavior of representative aircraft metals (Endo and Morrow), *JOM*, March, 159
detection of inclusions in bearing quality steel by the ultrasonic method (Meldrum), *MR&S*, September, 21
determination of arsenic in steels, iron ores, and spelters by atomic absorption (Hill), *STP* 443
determination of the cyclic stress-strain curve (Landgraf, Morrow, and Endo), *JOM*, March, 176
effect of microstructure on the ductility of steel in torsion (Lemmon and Sherby), *JOM*, June, 444
experimental and theoretical evaluation of tool wear (Schmidt and Ham), *JOM*, December, 1005
fracture surface topography and toughness of AISI 4340 steel (Carr and Larson), *JOM*, December, 865
high-strength, a comparison of the experimental biaxial strength of structural alloys with theoretical predictions (Rawe and Corn), *JOM*, March, 3
high-strength, correlation between sustained-load and fatigue crack growth in high-strength steels (Wei and Landes), *MR&S*, July, 25
high-strength, effects of marine environment on high-strength steels (Wacker), *STP* 445
influence of a synthetic seawater environment on the fracture behavior of HP 9-4-25 and HP 9-4-20 alloy steels (Clark and Wessel), *STP* 445
maraging, relationship between precipitation and dimple fracture in an 18 percent nickel maraging steel (Roesch and Henry), *STP* 453
polarization methods for measuring the corrosion of metals buried underground (Jones and Lowe), *JOM*, September, 600
structural, fractographic studies of crack-tip zones in a structural steel (Fegredo), *STP* 453
tempered martensite embrittlement and fracture toughness in SAE 4340 steel (Kula and Anctil), *JOM*, December, 816
tensile properties of eight constructional steels between 70 and -320 F (Clausing), *JOM*, June, 473
thermal fatigue resistance of martensitic steels (Rostoker), *JOM*, March, 117

ultrahigh-strength, correlations between fractographic features and plane-strain fracture toughness in an ultrahigh-strength steel (Spitzig), *STP* 453

Steel castings, equivalence of ASTM reference radiographs for steel castings (Crisculo), *MR&S*, May, 14

Steel forgings, progress in the development and manufacture of higher strength nonmagnetic retaining rings (Fritz and DeForest), *JOM*, September, 647

Steele, G. W. and Hudson, S. B.: A pycnometer test procedure for determining asphalt content of paving mixture, *STP* 461

Steele, J. H. and Fisher, C. P.: Asphalt content by neutron moderation, *STP* 461

Steele, John: see Bright, Richard, Justice, Alan and Steele, John

Stiehler, R. D.: History of measurement and the SI units, *MR&S*, June, 14

Stoll, Reiner G.: Performance and the consumer product industry, *MR&S*, March, 15

Stolki, T. J. and Haslett, W. H.: An improved variable strain bending form for determining the environmental craze resistance of polymers, *MR&S*, December, 32

Stoloff, N. S.: see Calhoun, C. D. and Stoloff, N. S.

Strain distribution, the distribution of concrete strains in the split cylinder test (Franca and Pincus), *JOM*, June, 393

Strain measurement
dynamic shear stress-strain-strain rate relations of iron (Yen and

Yew), *JOM*, June, 324

residual stresses in an overstrained thick-walled cylinder as affected by stress relief treatment (Acquaviva), *JOM*, June, 286

stress and strain distribution in a tension specimen with a circumferential notch (Clausing), *JOM*, September, 566

Strain tests
an improved variable strain bending form for determining the environmental craze resistance of polymers (Stolki and Haslett), *MR&S*, December, 32

a study of the compression test for ductile materials (Hsu), *MR&S*, December, 20

Stress analysis
analysis of the biaxial strip test for polymeric materials (Cost and Parr), *JOM*, June, 312

elastic crack-edge displacements for the compact tension specimen (Roberts), *MR&S*, February, 27

stress and strain distribution in a tension specimen with a circumferential notch (Clausing), *JOM*, September, 566

Stress corrosion
stress corrosion of aluminum alloy 7075-T 651 in organic liquids (Procter and Paxton), *JOM*, September, 729

the separation of corrosion and stress effects in stress corrosion testing (Cocks), *MR&S*, December, 29

Stress relieving, residual stresses in an overstrained thick-walled cylinder as affected by stress relief treatment

(Acquaviva), *JOM*, June, 286

Stress-strain curves, dynamic shear stress-strain-strain rate relations of iron (Yen and Yew), *JOM*, June, 324

Structures, structures problem-solving in the photoelastic laboratory (Sampson), *MR&S*, March, 19

Structural timber, evaluating structural wood, new method for establishing clear wood strength values (Markwardt), *MR&S*, August, 17

Subcritical flaw growth, modified WOL specimen for $K_{I, max}$ environmental testing (Novak and Rolfe), *JOM*, September, 701

Submarines, Aluminaut—three years later (Lindberg), *STP* 445

Suffet, I. H.: see Faust, S. D. and Suffet, I. H.

Sulphate attack, behavior of concrete in saturated and weak solutions of magnesium sulphate or calcium chloride (Neville), *JOM*, December, 780

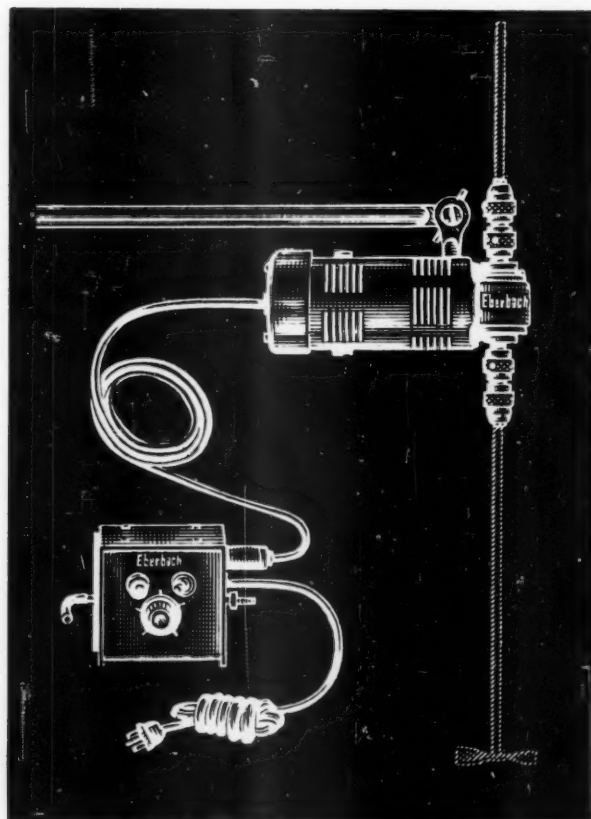
Sulphate-resisting cements, potential compound compositions of portland cements (Hansen), *JOM*, September, 761

Superalloys, a dynamic hot-corrosion rig testing procedure (Rentz, Walters, and Freeman), *JOM*, September, 520

Surfaces, Florida skid correlation study of 1967—skid testing with trailers (Smith and Fuller), *STP* 456

Sutton, W. H.: see Noone, M. J., Feingold, E. and Sutton, W. H.

Syntactic foam, development of a buoyancy material for the deep submergence search vehicle (Vath and Colletti), *JOM*, December, 948



REMOTE CONTROL STIR WITH FULL TORQUE THROUGHOUT SPEED RANGE

Model 70 RC-STIR is designed for intermittent medium duty. Has a Visible Overload Indicator allowing maximum utilization of torque range. Speed range is from 30 to 1200 rpm with full torque throughout. Separate SCR Control with three-foot-long plug-in power cord for remote control. Hollow Spindle has ball bearings, holds agitator shaft at two points with collet-type chucks to insure true running. Spindle also permits adjustment of working length of agitator without moving stirrer. RC-STIR is 6½" long, 2¼" wide, by 6" high through Hollow Spindle. Remote control is 2½" x 3¼" x 3¼". Total weight is 4 pounds. 1/10 h.p. series type motor. For 115 volt, 50/60 cycle operation. Catalog Number 7090, \$79.00 complete

Write for catalog 69.

P.O. BOX 1024

Eberbach
CORPORATION

ANN ARBOR, MICHIGAN
48106

T

- Tallon, G. R.: Microbes and microorganics in water—a review, *STP 448*
- Tarshansky, I. W.: see Aisks, E. G. and Tarshansky, I. W.
- Tastes, reviews of correlations of objective-subjective methods in the study of odors and taste, *STP 451*
- Tear test, drop-weight tear test reproducibility examined (Krafft—Chairman, Subcommittee 3: Committee E-24), *MR&S*, February, 11
- Tension tests
- abrasive wear of ferrous materials in climax operations (Norman and Hall), *STP 446*
 - clevis design for compact tension specimens used in plane strain fracture toughness testing (Bubsey, Jones and Brown), *MR&S*, June, 32
 - elastic crack-edge displacements for the compact tension specimen (Roberts), *MR&S*, February, 27
 - the development of a uniaxial tension test for concrete and similar brittle materials (Ward and Cook), *MR&S*, May, 16
 - the effect of grip stresses on the occurrence of failure in tension tests of wire (Dudderar), *MR&S*, October, 30
 - functional specimens of the tension test of rubber (Outa), *JOM*, June, 437
 - generalized parabolic work hardening during tensile deformation of brass (Hartman), *JOM*, March, 104
 - stress and strain distribution in a tension specimen with a circumferential notch (Clausing), *JOM*, September, 566
 - a survey of compression creep testing of metals (Dutton), *MR&S*, April, 11
 - tensile properties of eight constructional steels between 70 and —320 F (Clausing), *JOM*, June, 473
- Test methods
- development and evaluation of standard test methods, the role of statistical design of experiments (Wernimont), *MR&S*, September, 8
 - using ASTM specifications in industrial material specifications (Turner), *MR&S*, April, 8
- Test vehicles, review of test methods for tire friction characteristics (Meyer and Schrock), *JOM*, March, 44
- Testing laboratories, tort liability of independent testing agencies (Shelden), *MR&S*, January, 17
- Thermal conductivity, precision studies of ASTM thermal conductivity test for refractories (Wallace, Norton, Bart, and Brady), *MR&S*, September, 27
- Thermal fatigue
- gray cast iron, thermal fatigue resistance of (Rostoker), *JOM*, December, 909
 - martensitic steels, thermal fatigue resistance of (Rostoker), *JOM*, March, 117
- Thermal effluents
- control of thermal discharges at northern states power company's steam generating plants (Fitch), *MR&S*, December, 26
- Thermal measurements, infrared non-destructive inspection, a status report (Apple), *MR&S*, May, 10
- Thermochemistry, thermochemistry of the hot corrosion of superalloys (Quets and Drescher), *JOM*, September, 583
- Thiers, G. R. and Seed, H. B.: Strength and stress-strain characteristics of

- clays subjected to seismic loading conditions, *STP 450*
- Thompson, M. R.: Engineering properties of lime-soil mixtures, *JOM*, December, 968
- Thomson, R. M.: The impact of materials science on materials engineering, *JOM*, December, 939
- Timber, method for determining sample size when deriving tolerance limits for a timber species (Bendtsen and Rattner), *MR&S*, June, 30
- Timber pile, lateral load test on instrumental timber piles (Alizadeh), *STP 444*
- Tires, (studded) the cornering capacity of studded tires (Whitehurst), *STP 456*
- Tires (tests)
- review of test methods for tire friction characteristics (Meyer and Schrock), *JOM*, March, 44
 - testing tires for resistance to impact, shock, and cuts (Dobie), *MR&S*, March, 24
- Titanium alloys
- cumulative fatigue damage under cyclic strain control (Topper, Sandor, and Morrow), *JOM*, March, 189
 - cyclic stress-strain and fatigue behavior of representative aircraft metals (Endo and Morrow), *JOM*, March, 159
 - determination of the cyclic stress-strain curve (Landgraf, Morrow, and Endo), *JOM*, March, 176
 - development of a buoyancy material for the deep submergence search vehicle (Vath and Colletti), *JOM*, December, 948
 - experimental and theoretical evaluation of tool wear (Schmidt and Ham), *JOM*, December, 1005
 - influence of microstructure on the fracture topography of titanium alloys (Williams, Boyer, and Blackburn), *STP 453*
- Tolerance limits, method for determining sample size when deriving tolerance limits for a timber species (Bendtsen and Rattner), *MR&S*, June, 30
- Tool life, experimental and theoretical evaluation of tool wear (Schmidt and Ham), *JOM*, December, 1005
- Topography, the characteristics and applications of the scanning microscope (Kimoto and Russ), *MR&S*, January, 8
- Topper, T. H.:
- Sandor, B. I. and Morrow, JoDean: Cumulative fatigue damage under cyclic strain control, *JOM*, March, 189
 - Wetzel, R. M. and Morrow, JoDean: Neuber's rule applied to fatigue of notched specimens, *JOM*, March, 200
- Toughness
- fracture surface topography and toughness of AISI 4340 steel (Carr and Larson), *JOM*, December, 865
 - progress in the development and manufacture of higher strength nonmagnetic retaining rings (Fritz and DeForest), *JOM*, September, 647
- Trace elements
- determination of trace metals in seawater by atomic absorption spectrophotometry (Brewer, Spencer, and Smith), *STP 443*
 - spark source mass spectrometry (Escher), *MR&S*, June, 19
- Trout, D. E. and Mulholland, J. A.: Fatigue characteristics of five copper-base strip alloys commonly used for spring applications, *JOM*,

September, 633

- Trout, D. E.: see France, W. D., Trout, D. E. and Mulholland, J. A.
- Tucker, L. E.: see Olberts, D. R. and Tucker, L. E.
- Tungsten alloys, experimental and theoretical evaluation of tool wear (Schmidt and Ham), *JOM*, December, 1005
- Turbines, construction and operation of a hot corrosion test facility (Doering and Bergman), *MR&S*, September, 35
- Turk, A., Mark, H. L., and Mehlman, S.: Tracer gas nondestructive testing of activated carbon cells, *MR&S*, November, 24
- Turner, W. C.: Using ASTM specifications in industrial material specifications, *MR&S*, April, 8

U

- Ulrich, W. F. and Ramirez-Munoz, J.: Determination of calcium in high interference systems by atomic-absorption flame photometry, *STP 443*
- Ultrasonic method, detection of inclusions in bearing quality steel by the ultrasonic method (Meldrum), *MR&S*, September, 21
- Ultrasonic tests
- definition of fatigue cracks through nondestructive testing (Packman, Pearson, Owens, and Young), *JOM*, September, 666
 - differential ultrasonic visualization of impact fractures in glass-reinforced plastics (Green, Church, and Eilers), *MR&S*, October, 24
- Underground corrosion, polarization methods for measuring the corrosion of metals buried underground (Jones and Lowe), *JOM*, September, 600
- Units of measurement
- history of measurement and the SI units (Stieheler), *MR&S*, June, 14
 - the NBS contribution to technological measurements and standards (Kushner), *MR&S*, October, 8

V

- Vacuum extractor, vacuum extraction of bitumen from pavement mixtures (Jones, Wiley, and Smith), *STP 461*
- Valves, high-temperature corrosion testing of valve alloys (Johnson and Wilde), *JOM*, September, 556
- Variance (statistics), development and evaluation of standard test methods, the role of statistical design of experiments (Wernimont), *MR&S*, September, 8
- Vath, F. and Colletti, W.: Development of a buoyancy material for the deep submergence search vehicle, *JOM*, December, 948
- Vehicles, development of a buoyancy material for the deep submergence search vehicle (Vath and Colletti), *JOM*, December, 948
- Vesic, A. S.: Experiments with instrumented pile groups in sand, *STP 444*
- Load transfer, lateral loads, and group action of deep foundations, *STP 444*
- Vibration, the frequency-phase technique for damping measurements applied to several materials at elevated temperatures (Ainsworth and Moore), *MR&S*, October, 23
- Vickers hardness, the IRSID hot hardness testing machine (Rabbe and Pomey), *MR&S*, August, 26
- Viscometers
- calculation of shear stress, rate of shear, and viscosity from sliding plate microviscometer data (Min-shall), *JOM*, June, 408

geometry of the sliding plate microviscometer (Minshull), *JOM*, June, 372

Viscosity
calculation of shear stress, rate of shear, and viscosity from sliding plate microviscometer data (Minshull), *JOM*, June, 408

elongational flow (Hoffman), *JOM*, March, 28

equations for converting different viscosity units (O'Donnell), *MR&S*, May, 25

Viscosity-temperature chart, an improved viscosity-temperature chart for hydrocarbons (Wright), *JOM*, March, 19, errata, June, 493

Vogel, G. E.: see Johansson, O. K., Stark, F. O., Vogel, G. E., Laceyfield, R. M., Baney, R. H. and Flaningam, O. L.

W

Wacker, G. A.: Effects of marine environment on high-strength steels, *STP* 445

Wallace, R. W., Norton, C. L., Jr., Bart, R. K. and Brady, J. G.: Precision studies of ASTM thermal conductivity test for refractories, *MR&S*, September, 27

Walls, a recorder to measure the joint movement in a building (Gibbons and Karpati), *MR&S*, April, 18

Walsh, A.: Physical aspects of atomic absorption, *STP* 443

Walters, J. J.: see Rentz, W. A., Walters, J. J. and Freeman, W. R., Jr.

Ward, M. A. and Cook, D. J.: The development of a uniaxial tension test for concrete and similar brittle materials, *MR&S*, May, 16

Warke, W. R.: see Zipp, R. D., Warke, W. R. and Breyer, N. N.

Waste water
manual on water, *STP* 442

Water
fire retardant paints (Miller), *MR&S*, August, 33

fluorescence techniques in detection of organics in water (Christman and Arnquist), *STP* 448

freeze concentration of microorganisms in water (Baker), *STP* 448

manual on water, *STP* 442

microbes and microorganics in water—a review (Tallon), *STP* 448

molybdenum, determination of trace amounts of (Armstrong and Goldman), *STP* 448

nitrogen in microecological systems, uptake and assimilation of (Ehrlich and Slack), *STP* 448

organic pesticides in aquatic environments, analysis for (Faust and Suffet), *STP* 448

Water
phenols in surface waters by thin-layer chromatography, determination of (Smith and Lichtenberg), *STP* 448

Water tests
abrasive wear (Finkin), *STP* 446

abrasive wear of ferrous materials in climax operations (Norman and Hall), *STP* 446

nonmetallic materials, wear and friction of (Glaser), *STP* 446

tool wear, experimental and theoretical evaluation of (Schmidt and Ham), *JOM*, December, 1005

various modes of wear and their controlling factors (Bisson), *STP* 446

wear research in Europe (Salomon and deGee), *STP* 446

Weather, does the angle of exposure to the sun make a difference (Neuman), *MR&S*, June, 38

Weathering
fatigue life of weathered stainless-steel wire reported (Rigo), *STP* 454

influence of chromium on the atmospheric-corrosion behavior of steel (Schmitt and Mullen), *STP* 454

twenty-year atmospheric exposure data (Jasper and Lawson), *STP* 454

Wei, R. P. and Landes, J. D.: Correlation between sustained-load and fatigue crack growth in high-strength steels, *MR&S*, July, 25

Wernimont, Grant: Development and evaluation of standard test methods, the role of statistical design of experiments, *MR&S*, September, 8

Wessel, C. J.: The information background in the field of biological deterioration of nonmetallic materials, *STP* 445

Wessel, E. T.: see Clark, W. G., Jr. and Wessel, E. T.

Wetzel, R. M.: see Topper, T. H., Wetzel, R. M. and Morrow, JoDean

Whiskers
coatings in the preparation of Al_2O_3 filament/metal-matrix composites, the importance of (Noone, Feingold, and Sutton), *STP* 452, 59

interfacial bonding in graphite fiber-

AB Electromet Polisher

No. 70-1725 Complete



NO. 70-1723



NO. 70-1722

Accessories:
Extra Tanks • Cooling Coil

Extension Cables:
(a) Variable AC
(b) Variable DC, Anode/Cathode
(c) Variable DC, Etching

Beaker and Cathode Holder
Cathodes



AB Electromet Power Source No. 70-1723 with Fingertip Control

1. Newly designed contemporary styling, solid state rectification.
2. Increased D.C. power output, 0-150 volts D.C. at 0-7 amperes, 0-15 volts at 0-1 amperes D.C. with completely isolated output voltages.
3. Automatic mode selection with separate reset timers for polishing and etching cycles.
4. Manual mode selection with independent polishing and etching cycle selection.
5. Push button controls with indicating lights for mode and phase.
6. Automatic timing cycles, sequential or independent operation.
7. Automatic sequencing of potential levels with interlocked polishing and etching circuits.
8. D.C. ripple control circuitry (2%) with optional use during any mode or phase.
9. Dual scale easily readable ammeter and voltmeter with interlocked switchover circuitry.
10. Recessed outlets for A.C. and D.C. outputs.

AB Electromet Polishing Cell No. 70-1722 Unsurpassed in Eleven Years

1. Polyvinyl Chloride constructions — Impervious to attacks by electrolytes.
2. Magnetic pump impeller linkage — Not mechanical.
3. Minimum exposure of metal components to possible attack.
4. Instantly interchangeable electrolyte tanks, easy to empty, clean and fill.
5. Controlled sample area for stable current densities.
6. Accommodates large or small samples.
7. Cooling Coil and extra Electrolyte Tanks optional accessories.

Buehler Ltd.

APPARATUS FOR METALLURGY/GEOLOGY / 2120 Greenwood St., Evanston, Illinois 60204, U.S.A.

FOR FURTHER INFORMATION CIRCLE 1438 ON READER SERVICE CARD

resin composites (Goan and Prosen), STP 452
 interfacial stability of eutectic composites (Salkind), STP 452
 Whitehurst, E. A.:
 The cornering capacity of studded tires, STP 456
 Skid testing, MR&S, April, 20
 Wiebe, W.: see Dunsby, J. and Wiebe, W.
 Wiinikainen, R. A.: Scratch and abrasion testing of transparent plastics, MR&S, December, 17
 Wilde, R. A.: see Johnson, V. A. and Wilde, R. A.
 Wiley, M. L.: see Jones, G. M., Wiley, M. L. and Smith, R. F.
 Williams, J. C., Boyer, R. R. and Blackburn, M. J.: The influence of microstructure on the fracture topography of titanium alloys, STP 453
 Wire, the effect of grip stresses on the occurrence of failure in tension tests of wire (Dudderar), MR&S, October, 30

Wood
 evaluating structural wood, new method for establishing clear wood strength values (Markwardt), MR&S, August, 17
 marine fungi in the deep sea, deterioration of wood by (Kohlmeyer), STP 445
 modulus of elasticity and bending-strength ratio as indicators of tensile strength of lumber, (Orosz), JOM, December, 841
 Wood borers, deterioration of wood by marine fungi in the deep sea (Kohlmeyer), STP 445
 Work, G. W.: Effects of the deep-sea environment on battery materials and characteristics, STP 445
 Work hardening, generalized parabolic work hardening during tensile deformation of brass (Hartman), JOM, March, 104
 Wright, E. S.: see Almond, E. A., Embury, J. D. and Wright, E. A.
 Wright, W. A.: An improved viscosity-

temperature chart for hydrocarbons, JOM, March, 19, errata, June, 1943.

Y

Yen, C. C. S. and Yew, C. H.: Dynamic shear stress-strain-strain rate relations of iron, JOM, June, 324
 Yew, C. H.: see Yen, C. C. S. and Yew, C. H.
 Yield strength, yielding and plastic instability under biaxial stress in design of metal pressure vessels (Sines), JOM, June, 377
 Yong, R. N. and Japp, R. D.: Stress-strain behavior of clays in dynamic compression, STP 450
 Young, G.: see Packman, P. F., Pearson, H. S., Owens, J. S. and Young, G.

Z

Zipp, R. D., Warke, W. R. and Breyer, N. N.: A comparison of elevated temperature tensile fractures in non-leaded and leaded 4145 steel, STP 453

MR&S News Index—1969

This is an Index to the news columns of MR&S for Volume 9, 1969

A

Aikman, W. F., receives award of merit, September, 41
 Alloy numbering system, ASTM-SAE, December, 36
 Anderson, H. J., people in ASTM, May, 42
 1969 ASTM Officers Elected, August, 35
 ASTM in the '70s, November, 35
 ASTM grants, honors, and awards, 1969 awards of merit, September, 41
 ASTM grants, honors and awards, Arnold H. Scott Award, August, 35
 ASTM grants, honors and awards, Award to Executives, August, 34
 ASTM grants, honors and awards, Dudley Medal, August, 34
 ASTM grants, honors and awards, Frank E. Richart Award, August, 35
 ASTM grants, honors and awards, Harold Dewitt Smith Medal, August, 37
 ASTM grants, honors, and awards, Harold H. Levine receives adhesives award, April, 33
 ASTM grants, honors, and awards, Hogenotogler Award, August, 36
 ASTM grants, honors, and awards, honorary memberships, September, 40
 ASTM grants, honors, and awards, J. R. Churchill receives first H. V. Churchill award, February, 30
 ASTM grants, honors, and awards, Lundell-Bright Award, August, 36
 ASTM grants, honors, and awards, Max Hecht Award, January, 41
 ASTM grants, honors, and awards, P. D. Ownby receives ASTM research grant, January, 41
 ASTM grants, honors, and awards, Richard L. Templin Award, August, 36
 ASTM grants, honors and awards, Sam Tour Award, August, 37
 ASTM grants, honors, and awards, Sanford E. Thompson Award, August, 36
 ASTM grants, honors, and awards, Wal-

ter C. Voss Awards, August, 34
 ASTM board of directors, highlights of January meeting, April, 35
 ASTM board of directors, highlights of September meeting, January, 38; November, 40
 ASTM districts, Chicago, May 41
 ASTM districts, consumer protection viewed at Chicago, August, 39; cash award presented by Chicago district, August, 40
 ASTM Districts, Detroit, May 41
 ASTM districts, New York, February, 32
 ASTM districts, New York, May, 41
 ASTM districts, Northern and Southern California, May, 41
 ASTM districts, Northern Plains, May, 41
 ASTM districts, Northwest, February, 32
 ASTM districts, Northwest, May, 41
 ASTM districts, Philadelphia, February, 32
 ASTM, international activities, June, 40
 ASTM long-time members honored, September, 46
 ASTM meetings, national committee weeks established, September, 48
 ASTM national meetings, 1969 annual meeting, January, 41
 ASTM national meetings, 1969 annual meeting, April, 30; May, 34
 ASTM national meetings, 1969 annual meeting, June, 44
 ASTM national meetings, 1970 annual meeting, July, 30
 ASTM national meetings, Cincinnati hosts ASTM winter meeting in December, September, 48; October, 38
 ASTM national meetings, first publication fair to be held during annual meeting, June, 44
 ASTM national officers nominated, May, 30
 ASTM, 1968 photographic exhibit ribbon winners, January, 36
 ASTM Hospital dollars plan now in ef-

fect, February, 30
 ASTM staff, Albert L. Batik appointed director of publications, January, 42
 ASTM staff, William T. Cavanaugh appointed assistant executive secretary of ASTM, January, 42
 ASTM staff, W. F. McClune named Assistant manager of the Diffraction Data Dept., June, 47
 ASTM staff, I. C. Moore named ASTM production manager, June, 47
 ASTM staff, Frank X. Paul joins ASTM as manager of the Systems and Information Services Dept., February, 33
 ASTM staff, John J. Rothrock joins ASTM as an assistant director in the Technical Operations, February, 33
 ASTM staff, Henry J. Stremba appointed associate director of technical operations of ASTM, January, 42
 ASTM technical committees, methods of atmospheric sampling and analysis, January, 40
 ASTM to participate in materials engineering exposition and congress, July, 31
 ASTM standards, building construction standards seminar scheduled for September, June, 46
 ASTM standards, building construction standards seminar scheduled for March, February, 31
 ASTM standards, Society broadens scope of consumer standards committee, July, 31
 ASTM technical committees, chemical analysis of metals, February, 29

B

Bates, A. A., people in ASTM, August, 38
 Beachem, C. D., receives Sam Tour Award, August, 37
 Bendesky, Mr. (letter), September, 47
 Bernhard, R. K. (letter), September, 47

(Continued on page 74)

(Continued from page 72)

Birch, R. E., receives award of merit, September, 41
Bounds, A. M., receives award of merit, September, 42
Brister, P. M., receives award of merit, September, 42
Brown, B. F., receives Sam Tour Award, August, 37
Bunting, J. T., people in ASTM, April, 34

C

Caum, J. W., becomes honorary life fellow of SES, February, 29
Churchill, J. R., receives first H. V. Churchill award, February, 30
Clair, Miles N., people in ASTM, March, 31
Clark, R. A., receives award of merit, September, 42
Cook, A. G., award of merit, September, 42
Copant copper meeting held in Peru, January, 35
Copeland, R. E., receives Walter C. Voss Award, August, 34

D

Deming, W. E., receives award of merit, September, 42

E

Endicott, H. S., receives Arnold H. Scott Award, August, 35
Ernst, R. G., receives Lundell-Bright Award, August, 36

F

Featherby, S. F. (letter), February, 31
Foster, B. E., receives Frank E. Richart Award, August, 35

G

Garrison, D. H., receives ASTM Painter memorial fellowship, August, 38
Gavan, F. M., people in ASTM, February, 33
Gavan, F. M., receives award of merit, September, 43
Gillett, Lecture, to be presented by George V. Smith, April, 33
Gloger, W. A., receives award of merit, September, 43
Gohn, G. R., receives honorary membership, September, 40
Guettel, Charles L., (letter), June, 47
Gunst, H. C., receives award of merit, September, 43

H

Halstead, W. J., receives award of merit, September, 43
Harnden, George, retires from USASI/MSB, June, 46
Hegmon, R. R. (letter), July, 32
Hoffman, S. David, (letter), February, 31
Hoggan, G. D., (letter), June, 47
Holtz, W. G., receives award of merit, September, 44
Hovt, Samuel L. (technical communications), February, 28

I

Irvine, C. H. (letter), September, 47
ISO/TC61 on plastics holds annual meeting at ASTM headquarters, January, 40

J

Johnson, Bayard S., people in ASTM, March, 31

K

Kanter, J. J., receives honorary membership, September, 40
Kaufman, Gus, receives award of merit, September, 44
Kerscher, J. F., receives award of merit, September, 44

L

Legget, R. F., becomes honorary life fellow of SES, February, 29
LaQue, F. L., people in ASTM, March, 31
LaQue, F. L., addresses royal belgian society of engineers and industrialists, August, 39
Legatski, T. W., receives award of merit, September, 44
Levine, Harold H., receives adhesives award, April, 33
Lindquist, E. G. (letter), February, 31
Lower, W. A., receives ASTM Max Hecht award, January, 41
Lyons, W. J., receives Harold DeWitt Smith Medal, August, 37

M

Marburg Lecture, to be presented by Robb M. Thomson, April, 32
Matyas, E. L., receives Hogentogler Award, August, 36
Messersmith, D. C. (technical communications), February, 28
McIntyre, G. H., receives award of merit, September, 44
Monsch, H. D., receives award of merit, September, 45

O

Ownby, P. D., receives ASTM research grant, January, 41

P

Pardue, W. M., people in ASTM, May, 42
Perlman, A. E., receives Award to Executives, August, 34
Photographic Exhibit winners, October, 36
Pinney, Millard A., people in ASTM, February, 33
Plummer, H. C., receives honorary membership, September, 40

R

Rice, J. R., receives Dudley Medal, August, 34
Richards, Owen (letter), September, 47
Robertshaw, T. L. (technical communications), February, 28
Romig, J. R. (letter), July, 32

S

Saltonstall, R. B., receives award of merit, September, 45
Shuman, E. C., receives honorary membership, September, 41
Sisco, W. E., receives award of merit, September, 45
Smith, George V., to present Gillett Lecture, April, 33
Smith, P. J., people in ASTM, April, 34
Sobatzki, R. J., receives award of merit, September, 45
Stanford, C. J., people in ASTM, February, 33
Stivers, E. R. (letter), July, 32
Straitor, C. W., receives award of merit, September, 45
Sturen, Olle, people in ASTM, January, 42

T

Thomson, Robb M., to present Mar-

burg Lecture, April, 32
Trimble, H. M., people in ASTM, April, 34

U

USASI—50 years at the crossroads of the voluntary standards effort, March, 30
Unified numbering system for metals and alloys, September, 47

W

Walker, Fred D. (technical communications), February, 28
Wechter, E. J., receives award of merit, September, 46
Wills, M. H., receives Sanford E. Thompson Award, August, 36

For the Laboratory

(Continued from page 73)

and they are currently available with capacities from 5,000 lbs. to 100,000 lbs. for compression loading.

Morehouse Instrument Co.

400

Computing calculator system, offering a choice of two desktop calculators, includes a variety of peripheral accessories and a program library. This versatile system is relatively inexpensive, does not require special computer training to use, yet it outperforms some computers. All the elements in this new calculator system 9100 are compatible. The user may choose the model 9100A calculator, capable of solving a large number of his routine engineering and scientific problems, or he can choose the more sophisticated model 9100B which has double the memory plus subroutine capability to handle more complex problems. The peripherals work with either calculator without modification. They simply plug in.

Hewlett Packard

401

Digital recording gaging system for inspecting crankshafts has been developed. The new system provides digital printout of 20 critical dimensions on paper tape and reports the time of inspection and the identity of the lathe and grinder which processed the part. It also checks whether eight oil holes are present in the shaft and open. The system permits a more thorough, accurate and faster analysis of a crankshaft. Output terminals allow direct input of data to a computer for analysis, feedback and preventive maintenance. Gaging and recording are fully automatic and up to 80 crankshafts can be examined per hour. Following the automatic sequence, the operator can operate the system manually for additional checks of any dimension.

Bendix Automotive and Automation Co.

402

A compact eddy current instrument for job-site detection of surface and near-surface cracks in nonmagnetic materials has been developed. The 6 lb ED-520 also can sort materials according to such properties as hardness, alloy type, carbon content, heat treat condition, tensile strength, and grain structure where these relate to changes in magnetic and electrical qualities of the test part. The ED-520 instrument can be used in receiving inspection, process control, final inspection, research, and maintenance. The unit can function continuously for 24 h on rechargeable, built-in batteries. Its uncomplicated operation and portability makes it useful for testing in foundries, heat treat shops, manufacturing plants, and other operations where aids are needed quickly to establish product reliability.

Magnaflux Corp.

403